

# XTP SR HDMI

XTP HDMI Scaling Receiver



**Extron Electronics**  
INTERFACING, SWITCHING AND CONTROL

# Safety Instructions

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### ATTENTION:

- The Twisted Pair Extension technology works with shielded twisted pair (STP) cables **only**. To ensure FCC Class A and CE compliance, STP cables and STP connectors are also required.
- For more information on safety guidelines, regulatory compliances, EMI/EMF compatibility, accessibility, and related topics, see the [“Extron Safety and Regulatory Compliance Guide”](#) on the Extron website.

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## Conventions Used in this Guide

### Notifications

The following notifications are used in this guide:

**WARNING:** Potential risk of severe injury or death.

**AVERTISSEMENT :** Risque potentiel de blessure grave ou de mort.

**ATTENTION:**

- Risk of property damage.
- Risque de dommages matériels.

**NOTE:** A note draws attention to important information.

**TIP:** A tip provides a suggestion to make working with the application easier.

### Software Commands

Commands are written in the fonts shown here:

```
^ARMerge Scene , ,Op1 scene 1,1 ^B 51 ^W ^C  
[ 01 ] R 0004 00300 00400 00800 00600 [ 02 ] 35 [ 17 ] [ 03 ]
```

```
[Esc] X1 * X17 * X20 * X23 * X21 CE ←
```

**NOTE:** For commands and examples of computer or device responses mentioned in this guide, the character “Ø” is used for the number zero and “o” represents the capital letter “o.”

Computer responses and directory paths that do not have variables are written in the font shown here:

```
Reply from 008.132.180.48: bytes=32 times=2ms TTL=32  
C:\Program Files\Extron
```

Variables are written in slanted form as shown here:

```
ping xxx.xxx.xxx.xxx -t  
SOH R Data STX Command ETB ETX
```

Selectable items, such as menu names, menu options, buttons, tabs, and field names are written in the font shown here:

```
From the File menu, select New.  
Click the OK button.
```

## Specifications Availability

Product specifications are available on the Extron website, [www.extron.com](http://www.extron.com).

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# Introduction

This section contains general information about this guide and the Extron XTP SR HDMI scaling receiver. Topics in this section include:

- [About this Guide](#)
- [About the XTP SR HDMI Scaling Receiver](#)
- [Key Features](#)

## About this Guide

This guide provides installation, operation, control, and reference information for the XTP SR HDMI scaling receiver. In this guide, the terms “scaling receiver” and “XTP SR HDMI” are used interchangeably to refer to the XTP SR HDMI scaling receiver.

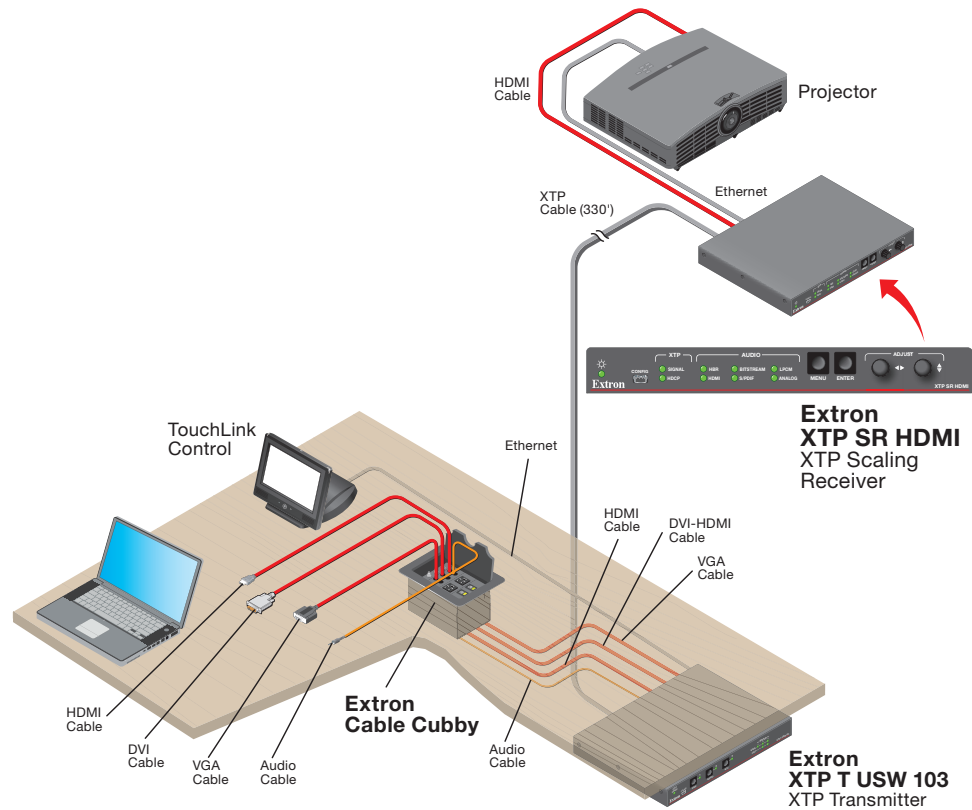
## About the XTP SR HDMI Scaling Receiver

The Extron XTP SR HDMI receives video, audio, bidirectional RS-232 and IR, and Ethernet signals over a single twisted pair cable. It is HDCP-compliant and supports 1080p/60 Deep Color, 1920x1200 signals, and embedded HD lossless audio formats. It works with Extron XTP devices in matrix, or point-to-point applications for signal distribution and long-distance transmission (up to 330 feet) between remote endpoints, using shielded twisted pair cable.

It can be powered locally or remotely through an Extron XTP Power Injector or XTP matrix switcher (see [Power Connection](#) on page 9).

This device can be controlled through the on-screen display (OSD) menu (see [On-Screen Display Menu System](#) on page 13), Extron Simple Instruction Set (SIS) commands (see [SIS Configuration and Control](#) on page 20), or the XTP System Configuration Software (see [XTP System Configuration Software](#) on page 29).

The following diagram shows one way the XTP SR HDMI can be integrated in an XTP point-to-point application. The scaling receiver can also be used with an XTP matrix switcher (see the XTP matrix switcher user guide for more details on matrix applications).



**Figure 1.** Typical XTP SR HDMI Point-to-Point Application

## Key Features

**Reliable cable infrastructure** — Transmits or receives video, audio, bidirectional RS-232 and IR, and Ethernet up to 330 feet (100 m) over a single shielded twisted pair cable, providing high reliability and maximum performance on an economical and easily installed cable infrastructure.

**Support for 1080p/60 Deep Color and 1920x1200 signals** — Supports digital signal transmission up to 330 feet over a single twisted pair cable, maintaining superior image quality at the highest resolutions.

**Shielded twisted pair cable compatibility** — Optimized for use with common shielded twisted pair cable types. XTP systems fully support a maximum transmission distance of 330 feet (100 meters) for all compatible resolutions when used with shielded twisted pair cable. Shielded twisted pair cabling with solid center conductor sizes of 24 AWG or better is recommended for optimal performance.

**Bidirectional RS-232 and IR insertion** — Allows a remote display to be controlled without the need for additional cabling through bidirectional RS-232 control and IR signals inserted into the XTP output.

**HDMI specification features** — Support data rates up to 6.75 Gbps, Deep Color up to 12-bit, 3D, HD lossless audio formats, and CEC pass-through.

**HDCP compliance** — Ensures display of content-protected media and interoperability with other HDCP-compliant devices.



**EDID Minder** — Automatically manages EDID communication between connected devices. It ensures that all sources power up properly and reliably outputs content for display.

**Key Minder** — Authenticates and maintains continuous HDCP encryption between input and output devices to ensure quick and reliable switching in professional AV environments, while enabling simultaneous distribution of a single source signal to one or more displays.

**Ethernet extension** — Centralized 10/100Base-T Ethernet communication can be implemented via an Ethernet pass-through port to reduce the amount of independent network drops required within a system.

**Remote power capability** — To simplify integration, XTP transmitters and receivers can be powered by the XTP CrossPoint Matrix Switcher or XTP power injectors.

**Multiple embedded audio formats** — Compatible with a broad range of multi-channel audio signals, providing reliable operation with HDMI sources.

**HDMI audio de-embedding with analog stereo and digital S/PDIF audio outputs** — Digital HDMI audio is made available as a balanced or unbalanced analog stereo signal on captive screw connectors or a S/PDIF connector.

**EDID and HDCP transmission** — Supports DDC channels that are actively buffered, allowing continuous communication between source and display.

**Contact closure device control** — Enables control of room functions such as projector lifts, screen operations, and other environmental controls.

**Aspect ratio control** — Controls the aspect ratio of the video output by selecting a FILL mode, which provides a full screen output, or a FOLLOW mode, which preserves the original aspect ratio of the input signal.

**Image freeze control** — Freezes a live image through RS-232 or USB control.

**Internal test patterns** — Helps calibrate and setup the output.

**XTP integrated system products compatibility** — Is compatible with all XTP integrated system products. XTP is a flexible, reliable signal switching and distribution system that provides a completely integrated solution for multiple digital and analog formats.

**Front panel security lockout** — Allows security lockout of front panel buttons.

**UL 2043 plenum rated** — Meets UL 2043 for smoke and heat release for installation within a plenum airspace above a drop ceiling (power supply excluded). Above-the-ceiling placement conceals the scaling receiver to prevent theft, and is convenient for installing equipment when space inside the room is limited.

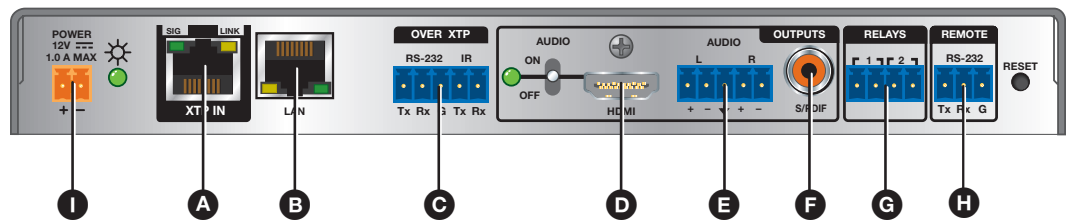
# Installation

This section contains installation procedures for the XTP SR HDMI and wiring details. Topics in this section include:

- [Rear Panel Connectors](#)
- [Making Connections](#)

The XTP SR HDMI can be placed on a tabletop or mounted in a rack or under a desk (see [Mounting](#) on page 43).

## Rear Panel Connectors



- A** [XTP input connector](#) (page 4)
- B** [LAN connector](#) (page 5)
- C** [RS-232 and IR Over XTP connector](#) (page 5)
- D** [HDMI output connector](#) (page 5)
- E** [Analog audio output connector](#) (page 5)
- F** [S/PDIF audio output connector](#) (page 6)
- G** [Relay connectors](#) (page 6)
- H** [Remote RS-232 connector](#) (page 6)
- I** [DC power connector](#) (page 6)

**Figure 2. XTP SR HDMI Rear Panel Connectors**

- A** **XTP input connector** — Connect a twisted pair cable to the RJ-45 connector labeled XTP IN on the XTP SR HDMI and the XTP output port on another XTP device to pass all signals (see [TP Cable Termination and Recommendations](#) on page 7). This cable carries the following signals:
  - Digital video
  - Digital audio
  - Bidirectional RS-232 and IR commands
  - Remote power
  - Ethernet communication
  - System communication

**Signal LED indicator** — Lights green when the XTP SR HDMI receives an active XTP input signal from a compatible transmitter or matrix switcher.

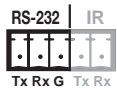
**Link LED indicator** — Lights yellow when a valid XTP link is established.

**ATTENTION:**

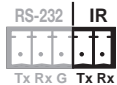
- Do not connect this connector to a computer data or telecommunications network.
- Ne connectez pas ce port à des données informatiques ou à un réseau de télécommunications.
- XTP remote power is intended for indoor use only. No part of the network that uses XTP remote power should be routed outdoors (see **Remote power** on page 11).
- XTP à distance est destiné à une utilisation en intérieur seulement. Aucune partie du réseau qui utilise l'alimentation XTP à distance ne peut être routée en extérieur (voir **Remote power** à la page 11).

**B LAN connector** — Connect a control device or device to be controlled to the RJ-45 connector labeled LAN for 10/100Base-T Ethernet communication through this pass-through port. LEDs on the connector indicate link and activity status.

**C RS-232 Over XTP port** — To pass bidirectional serial or other control signals between XTP-compatible devices, connect a control device to the 5-pole captive screw connector. The port includes only the 3 poles labeled “RS-232.”



**IR Over XTP port** — To transmit and receive IR signals (up to 40 kHz), connect a control device to the 5-pole captive screw connector. This port includes only the 2 poles labeled “IR” and shares the ground pole with the RS-232 port.



**NOTE:** RS-232 and IR data can be transmitted simultaneously (see **RS-232 and IR Over XTP Communication** on page 9 for wiring details).

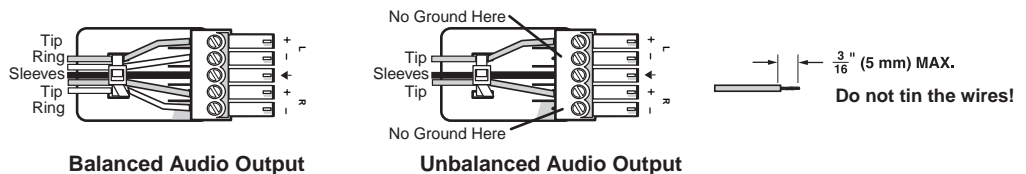
**D HDMI output connector** — Connect a digital video display to the female HDMI connector (see **Rear Panel HDMI Audio Switch** on page 13 to mute or unmute embedded audio output). It can accept HDMI, DVI (with an appropriate adapter), or DisplayPort video signals.

**NOTES:**

- The maximum cable length is 15 feet.
- Use Extron LockIt lacing brackets to secure HDMI connectors to the device (see **HDMI Connection** on page 6).

**E Analog audio output connector** — Connect a balanced or unbalanced, stereo or mono audio output device to the 3.5 mm, 5-pole captive screw connector for 2-channel stereo analog audio output (see figure 3 for wiring details).

**NOTE:** If the device is receiving 2-channel LPCM embedded audio on the HDMI input signal, it is extracted and converted to a stereo analog signal.



**Figure 3. Audio Output Wiring**

**ATTENTION:**

- For unbalanced audio, connect the sleeves to the contact ground. Do not connect the sleeves to the negative (-) contacts.
- Pour l’audio asymétrique, connectez les manchons au contact au sol. Ne pas connecter les manchons aux contacts négatifs (-).

**F S/PDIF audio output connector** — Connect an audio device to the female orange RCA connector for digital S/PDIF audio output (see [Audio Output Overview](#) on page 13 for supported audio formats on the S/PDIF output). The type of audio present on this output is dictated by the following:

- The audio format selected on the source material or device.
- The source device automatically outputting an audio format through EDID.

**G Relay connectors** — Connect equipment that can be controlled via momentary or latching contact, such as projector screens or lifts, to the normally open relays.

**ATTENTION:**

- Do not exceed 24 V at 1.0 A for each port.
- Ne pas dépasser 24 volts à 1,0 A pour chaque port.

**H Remote RS-232 connector** — Connect a host device to the 3.5 mm, 3-pole captive screw connector for serial control of the scaling receiver.

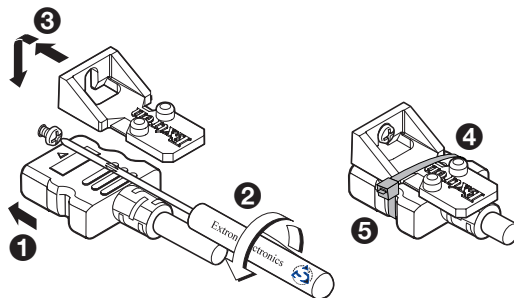
**I DC power connector and LED** — Connect the external 12 V, 1.0 A power supply to the 2-pole captive screw connector. The Power LED lights to indicate the device is receiving power.

**NOTE:** The XTP SR HDMI can also be powered remotely (see [Power Connection](#) on page 9).

## Making Connections

### HDMI Connection

Use an Extron LockIt Lacing Bracket to secure an HDMI cable to each device as follows:



**Figure 4. Installing the LockIt Lacing Bracket**

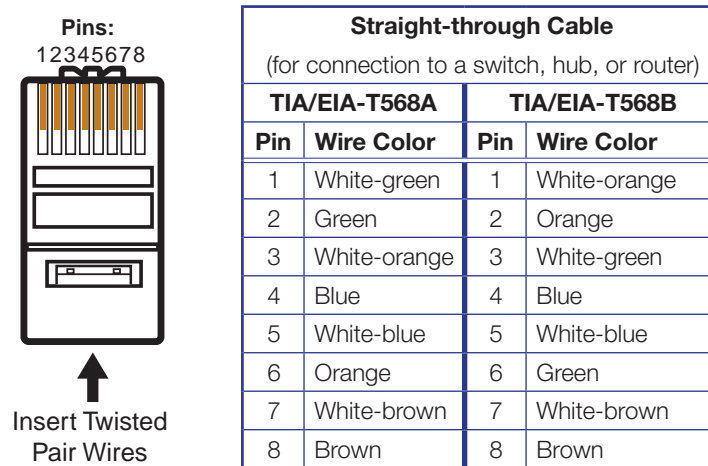
1. Plug the HDMI cable into the panel connection (see figure 4, **1**).
2. Loosen the HDMI connection mounting screw from the panel enough to allow the LockIt lacing bracket to be placed over it (**2**). The screw does not have to be removed.
3. Place the LockIt lacing bracket on the screw and against the HDMI connector, then tighten the screw to secure the bracket (**3**).
4. Loosely place the included tie wrap around the HDMI connector and the LockIt lacing bracket as shown (**4**).
5. While holding the connector securely against the lacing bracket, use pliers or similar tools to tighten the tie wrap, then remove any excess length (**5**).

**ATTENTION:**

- Connect and pull the tie wraps until they are secure. Do not overtighten.
- Connectez et tirez les serre-câbles jusqu'à ce qu'ils soient sécurisés. Ne pas trop serrer.

## TP Cable Termination and Recommendations

Use the following pin configurations for twisted pair cables.



**Figure 5. Twisted Pair Cable Termination**

### Supported cables

The XTP SR HDMI is compatible with shielded twisted pair (F/UTP, SF/UTP, and S/FTP) and unshielded twisted pair (U/UTP) cables.

#### ATTENTION:

- Do not use Extron UTP23SF-4 Enhanced Skew-Free AV UTP cable or STP201 cable to link the XTP products.
- N'utilisez pas le câble AV Skew-Free UTP version améliorée UTP23SF d'Extron ou le câble STP201 pour relier les produits XTP.
- To ensure FCC Class A and CE compliance, STP cables and STP connectors are required.
- Afin de s'assurer de la compatibilité entre FCC Classe A et CE, les câbles STP et les connecteurs STP sont nécessaires.

## Cable recommendations

Extron recommends using the following practices to achieve full transmission distances up to 330 feet (100 m) and reduce transmission errors.

- Use the following Extron XTP DTP 24 SF/UTP cables and connectors for the best performance:
  - **XTP DTP 24/1000** Non-Plenum 1000' (305 m) spool 22-236-03
  - **XTP DTP 24P/1000** Plenum 1000' (305 m) spool 22-235-03
  - **XTP DTP 24 Plug** Package of 10 101-005-02
- If not using XTP DTP 24 cable, at a minimum, Extron recommends 24 AWG, solid conductor, STP cable with a minimum bandwidth of 400 MHz.
- Terminate cables with shielded connectors to the TIA/EIA-T568B standard.
- Limit the use of more than two pass-through points, which may include patch points, punch down connectors, couplers, and power injectors. If these pass-through points are required, use shielded couplers and punch down connectors.

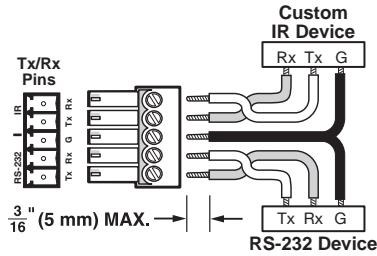
**NOTE:** When using STP cable in bundles or conduits, consider the following:

- Do not exceed 40% fill capacity in conduits.
- Do not comb the cable for the first 20 M, where cables are straightened, aligned, and secured in tight bundles.
- Loosely place cables and limit the use of tie wraps or hook-and-loop fasteners.
- Separate twisted pair cables from AC power cables.

## RS-232 and IR Over XTP Communication

The RS-232 and IR Over XTP connector is for pass-through transmission of serial signals, such as projector control signals, and infrared data. To pass bidirectional serial command signals between XTP-compatible devices, connect a control device to the three leftmost poles (Tx, Rx, and G) of the 5-pole captive screw connector. To transmit and receive IR signals, connect a control device to the three rightmost poles (G, Tx, and Rx). The ground (G) pole is shared.

**NOTE:** RS-232 and IR data can be transmitted or received simultaneously (see figure 6 below for wiring considerations).



**Figure 6.** Wiring the RS-232 and IR Over XTP Connector

**ATTENTION:** The length of exposed wires in the stripping process is critical.

**ATTENTION :** La longueur des câbles exposés est primordiale lorsque l'on entreprend de les dénuder.

- The ideal length is 3/16 inch (5 mm).
- La longueur idéale est de 5 mm (3/16 inches).
- Any longer and the exposed wires may touch, causing a short circuit between them.
- S'ils sont un peu plus longs, les câbles exposés pourraient se toucher et provoquer un court circuit.
- Any shorter and the wires can be easily pulled out even if tightly fastened by the captive screws.
- S'ils sont un peu plus courts, ils pourraient sortir, même s'ils sont attachés par les vis captives.

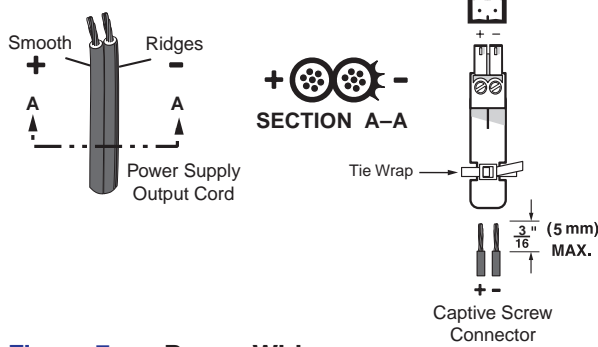
## Power Connection

Apply power to the scaling receiver locally with the provided power supply or remotely with a power injector or a matrix switcher.

**ATTENTION:**

- XTP remote power is intended for indoor use only. No part of the network that uses XTP remote power should be routed outdoors (see [Remote power](#) on page 11).
- XTP à distance est destiné à une utilisation en intérieur seulement. Aucune partie du réseau qui utilise l'alimentation XTP à distance ne peut être routée en extérieur (voir [Remote power](#) à la page 11).

## Local power



**Figure 7. Power Wiring**

The XTP SR HDMI can be connected to a local power supply (see figure 7).

**WARNING:** Electric shock hazard. The two power cord wires must be kept separate while the power supply is plugged in. Remove power before wiring.

**AVERTISSEMENT :** Risque de choc électrique grave. Les deux cordons d'alimentation doivent être tenus à l'écart l'un de l'autre quand l'alimentation est branchée. Couper l'alimentation avant de faire l'installation électrique.

### ATTENTION:

- This product is intended for use with a UL Listed power source marked "Class 2" or "LPS" rated 12 VDC, 1.0 A minimum. Always use a power supply supplied by or specified by Extron. Use of an unauthorized power supply voids all regulatory compliance certification and may cause damage to the supply and the unit.
- Ce produit est destiné à une utilisation avec une source d'alimentation listée UL avec l'appellation « Classe 2 » ou « LPS » et normée 12 Vcc, 1,0 A minimum. Utilisez toujours une source d'alimentation fournie par Extron. L'utilisation d'une source d'alimentation non autorisée annule toute conformité réglementaire et peut endommager la source d'alimentation ainsi que l'unité.
- Unless otherwise stated, the AC/DC adapters are not suitable for use in air handling spaces or in wall cavities. The installation must always be in accordance with the applicable provisions of National Electrical Code ANSI/NFPA 70, article 725 and the Canadian Electrical Code part 1, section 16. The power supply shall not be permanently fixed to a building structure or similar structure.
- Sauf mention contraire, les adaptateurs AC/DC ne sont pas appropriés pour une utilisation dans les espaces d'aération ou dans les cavités murales. Cette installation doit toujours être en accord avec les mesures qui s'applique au National Electrical Code ANSI/NFPA 70, article 725, et au Canadian Electrical Code, partie 1, section 16. La source d'alimentation ne devra pas être fixée de façon permanente à une structure de bâtiment ou à une structure similaire.
- Power supply voltage polarity is critical. Incorrect voltage polarity can damage the power supply and the unit. The ridges on the side of the cord identify the power cord negative lead.
- La polarité de la source d'alimentation est primordiale. Une polarité incorrecte pourrait endommager la source d'alimentation et l'unité. Les stries sur le côté du cordon permettent de repérer le pôle négatif du cordon d'alimentation.
- The length of the exposed (stripped) copper wires is important. The ideal length is 3/16 inch (5 mm).
- La longueur des câbles exposés est primordiale lorsque l'on entreprend de les dénuder. La longueur idéale est de 5 mm (3/16 inch).

**TIP:** Do not tin the stripped power supply leads. Tinned wires are not as secure in the captive screw connectors and could be pulled out.



## Remote power

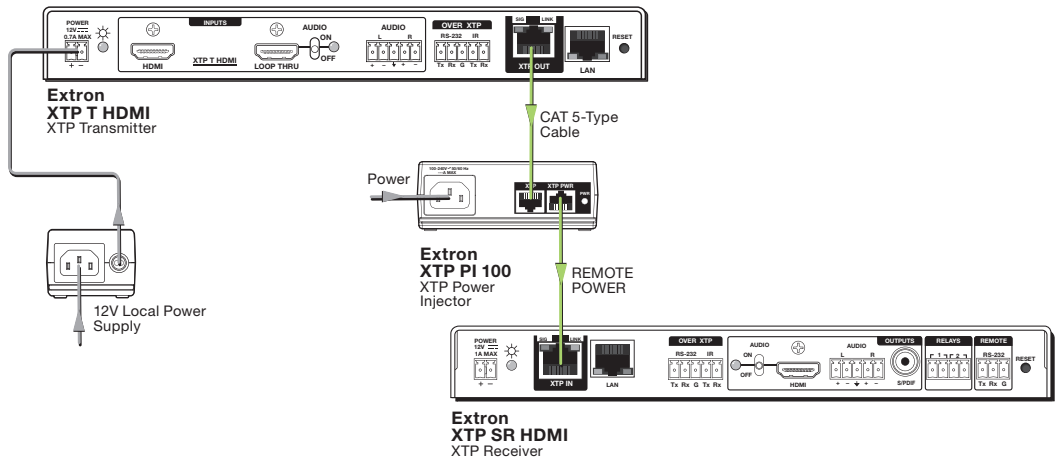
The XTP SR HDMI can be powered remotely through an XTP Power Injector or through an XTP matrix switcher.

### ATTENTION:

- XTP remote power is intended for indoor use only. No part of the network that uses XTP remote power should be routed outdoors.
- XTP à distance est destiné à une utilisation en intérieur seulement. Aucune partie du réseau qui utilise l'alimentation XTP à distance ne peut être routée en extérieur.

## Power injector

To power the XTP SR HDMI remotely with an XTP Power Injector, power one device locally (see [Local power](#) on page 10) and connect an XTP Power Injector to the XTP cable run along the XTP ports (see the *XTP Power Injector User Guide* for more installation information).



**Figure 8.** Typical Point-to-Point Application with Remote Power

**NOTE:** The power injector provides remote power up to 330 feet with a shielded twisted pair cable with 24 AWG wire.

## Direct power from an XTP matrix switcher

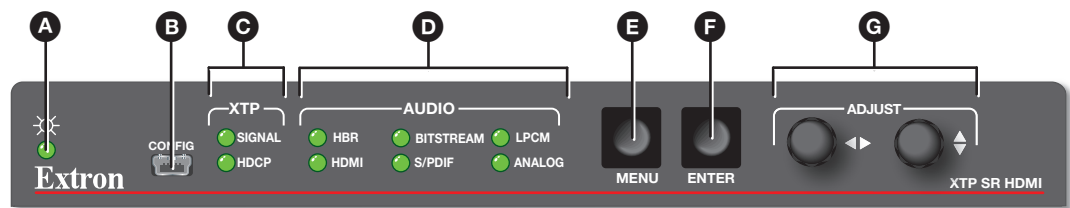
XTP matrix switchers have a fixed amount of power available to provide remote power to connected XTP endpoints (see the XTP matrix switcher user guide for more details). To manage available power from the XTP matrix switcher, use the XTP System Configuration Software with the matrix switcher.

# Operation

This section contains information for front panel operation and configuration of the XTP SR HDMI and configuration through the On-Screen Display (OSD) menu. Topics in this section include:

- [Front Panel Features and Indicators](#)
- [Rear Panel HDMI Audio Switch](#)
- [Audio Output Overview](#)
- [On-Screen Display Menu System](#)
- [Front Panel Lockout Mode \(Executive Mode\)](#)

## Front Panel Features and Indicators



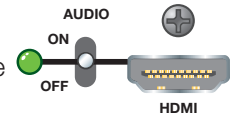
**Figure 9.** XTP SR HDMI Front Panel

- A Power LED indicators** — Lights when power is applied to the unit. There are two Power LED indicators, one on the front panel and one on the left side of the rear panel.
- B Config port** — If desired, connect a host device to the front panel USB mini-B port for configuring the switcher.
- C XTP indicators:**
  - Signal LED indicator** — Lights when an active XTP input signal is received.
  - HDCP LED indicator** — Lights when the received input signal is encrypted.
- D Audio indicators:**
  - HBR LED indicator** — Lights when the audio input is high bit rate audio.
  - Bitstream LED indicator** — Lights when the embedded audio signal format is a Dolby® Digital, DTS, or 2-Ch Dolby.
  - LPCM LED indicator** — Lights when the embedded audio signal is LPCM-2Ch.
  - HDMI LED indicator** — Lights when the audio input signal is multi-channel, LPCM-2Ch, or HiDef audio.
  - S/PDIF LED indicator** — Lights when the input audio format is multi-channel or LPCM.
  - Analog LED indicator** — Lights when the received audio format is LPCM.
- E Menu button** — Press this button to navigate the OSD menu or enable or disable front panel lockout mode (see [Front Panel Lockout Mode \(Executive Mode\)](#) on page 19).

- F Enter button** — Press this button to navigate the OSD menu or enable or disable front panel lockout mode (see [Front Panel Lockout Mode \(Executive Mode\)](#) on page 19).
- G Adjustment knobs** — Rotate the horizontal (◀▶) or vertical (⬆⬇) adjustment knob to navigate the on-screen display menu or adjust submenu items.

## Rear Panel HDMI Audio Switch

The XTP SR HDMI has an HDMI audio switch that mutes or unmutes the embedded audio on the HDMI output connector. The LED next to the switch lights when HDMI audio is enabled.



Move and hold the rear panel HDMI audio switch up for about 1 second to enable embedded audio on the associated HDMI connector, or move and hold the HDMI audio switch down for about 1 second to disable embedded audio on the associated HDMI connector. The switch returns to the middle position after it has been released so the device can continue to be controlled through SIS commands or from an XTP matrix switcher.

## Audio Output Overview

By default, an XTP transmitter or matrix switcher prioritizes embedded digital audio over analog audio. Use SIS commands (see [SIS Configuration and Control](#) on page 20) or the XTP System Configuration Software (see [XTP System Configuration Software](#) on page 29) to manually select the audio input.

Audio Input Format	Audio Output LEDs		
	HDMI	S/PDIF	Analog
LPCM	X	X	X
Multi-channel PCM	X		
Dolby Digital 2/0	X	X	
Dolby Digital 2/0 Surround	X	X	
Dolby Digital 5.1	X	X	
Dolby Digital EX	X	X	
Dolby Digital Plus	X		
Dolby TrueHD	X		
DTS 2-channel	X	X	
DTS Digital Surround 5.1	X	X	
DTS-ES Matrix 6.1	X	X	
DTS-ES Discrete 6.1	X	X	
DTS-HD	X		
DTS-HD Master Audio	X		

## On-Screen Display Menu System

XTP SR HDMI configuration and adjustments can be performed by using SIS commands (see [SIS Configuration and Control](#) on page 20), the XTP System Configuration Software (see [XTP System Configuration Software](#) on page 29), or by using the front panel controls and the OSD menu. The OSD menu is used primarily when the receiver is first set up.

**NOTE:** The OSD menu has a fixed time-out of 10 seconds.

## Menu Navigation Using Front Panel Controls

**Menu button** — Press the **Menu** button to activate the OSD menu or close submenu items.

**Enter button** — Press the **Enter** button to select submenu items or accept changes to settings.

**Adjustment knobs** — Rotate the **Horizontal Adjustment** (◀▶) knob or **Vertical Adjustment** (⬆️⬇️⬇️⬆️) knob to navigate submenus and submenu items and adjust settings.

## Menu Overview

The OSD menu contains six submenus with various submenu items for adjusting settings or viewing device information. Use the **Menu**, **Enter**, and adjustment knobs to navigate the OSD menu.

### To open the OSD menu:

1. Connect a display device to the HDMI output connector.
2. Press the **Menu** button to open the OSD menu.

### To navigate the OSD menu:

1. After opening the OSD menu, rotate the adjustment knobs to navigate the six submenus. The following table shows the six submenus and their respective submenu items.

Submenus	Submenu Items				
<b>Image Reset</b>	Image reset				
<b>Picture Controls</b>	Horizontal/vertical position	Horizontal/vertical size	Brightness/contrast	Detail	
<b>User Presets</b>	Recall	Save			
<b>Input Configuration</b>	Total pixels	Horizontal/vertical active pixels			
<b>Output Configuration</b>	Resolution	Output format	Color bit depth		
<b>Advanced Configuration</b>	Test pattern	Blank	Freeze	Aspect ratio	System reset

2. Press the **Enter** button to open the selected submenu.
3. Rotate the adjustment knobs to navigate the submenu items.
4. Press the **Enter** button to adjust or view a submenu item or press the **Menu** button to return to the list of submenus.

### To adjust a submenu item:

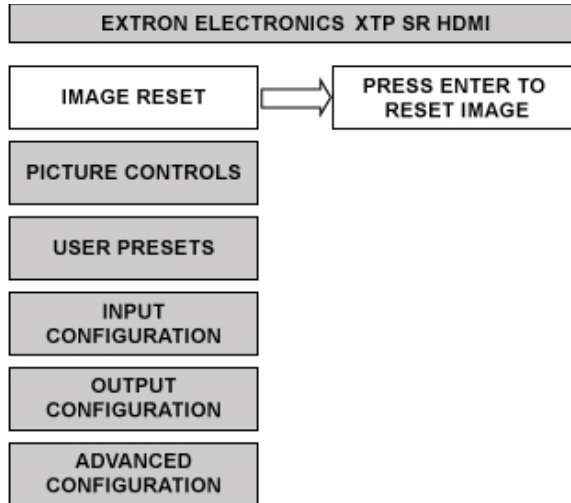
1. Navigate to an adjustable submenu item and press the **Enter** button to select the submenu item.
2. As required, rotate the adjustment knobs or press the **Enter** button to adjust the submenu item.
3. Press the **Enter** button to accept the new value. Press the **Menu** button to cancel any pending changes.

### To exit the OSD menu:

While in the list of submenus, press the **Menu** button to exit the OSD menu.

## Image Reset Submenu

The Image Reset submenu allows the execution of a one-time reset of the image.

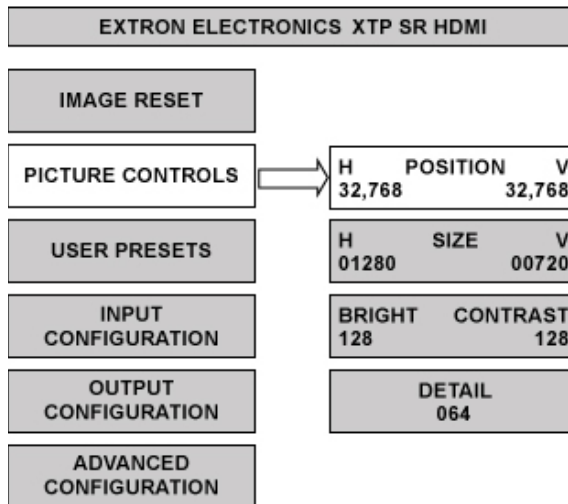


**Figure 10. Image Reset Submenu**

**Image reset** — Press the **Enter** button to reset shift and size settings to the default values.

## Picture Controls Submenu

The Picture Controls submenu allows the adjustment of picture settings.



**Figure 11. Picture Controls Submenu**

**Image position** — Rotate the **Horizontal Adjustment** knob to adjust the horizontal (H) position of the image. Rotate the **Vertical Adjustment** knob to adjust the vertical (V) position of the image.

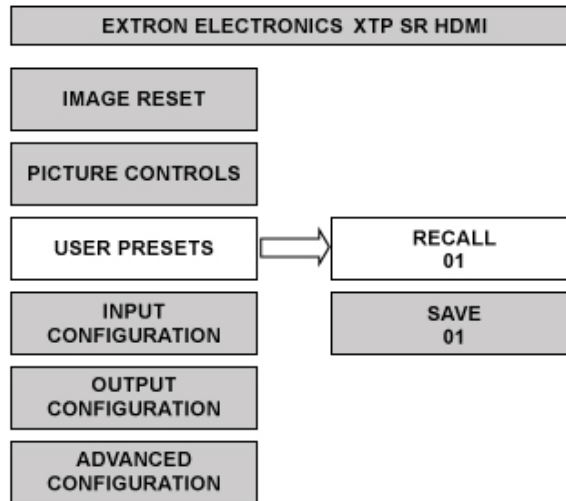
**Image size** — Rotate the **Horizontal Adjustment** knob to adjust the horizontal (H) size of the image. Rotate the **Vertical Adjustment** knob to adjust the vertical (V) size of the image.

**Brightness and contrast** — Rotate the **Horizontal Adjustment** knob to adjust the brightness (Bright) of the image. Rotate the **Vertical Adjustment** knob to adjust the contrast (Cont) of the image.

**Detail** — Rotate the adjustment knobs to adjust the detail of the image.

## User Presets Submenu

The **User Presets** submenu saves the current picture control settings for the selected input. User presets can be saved and recalled later on another input, allowing them to also be used as aspect ratio or discrete size and center shortcuts. There are 8 user preset slots available.



**Figure 12. User Presets Submenu**

User presets save the following settings:

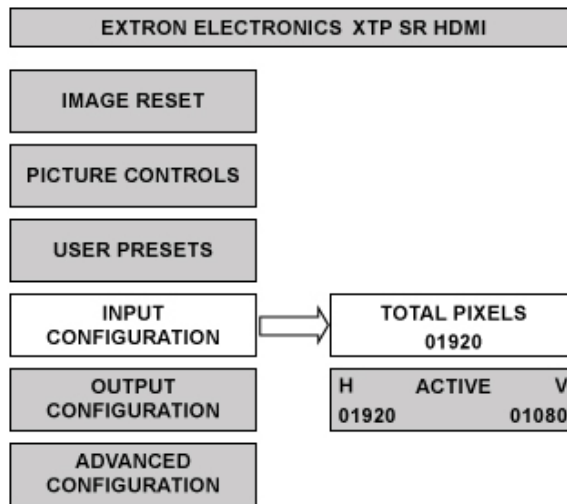
- Brightness and contrast
- Detail
- Image size and position

**Recall** — Rotate the adjustment knobs to select a preset to recall.

**Save** — Rotate the adjustment knobs to select a preset to store the current picture control settings.

## Input Configuration Submenu

The Input Configuration submenu displays the total pixels and horizontal and vertical active pixels of the input signal.



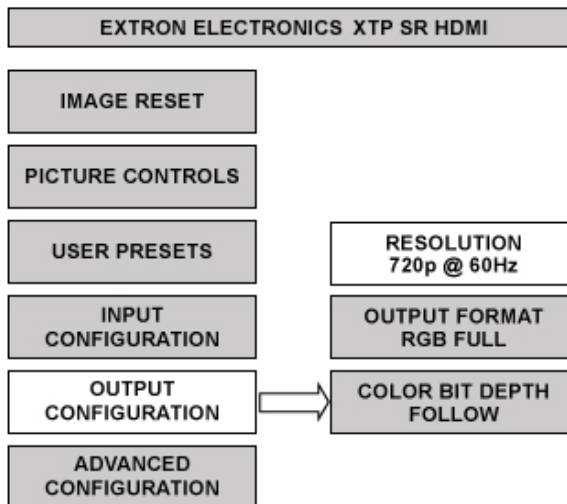
**Figure 13.** Input Configuration Submenu

**Total pixels** — Displays the total pixels of the input signal. This is not configurable.

**Active** — Displays the active horizontal (H) pixels and vertical (V) lines of the input signal. These are not configurable.

## Output Configuration Submenu

The Output Configuration submenu is used to configure of the output resolution and refresh rate. Output format and color bit depth settings are not configurable from the OSD. To configure either setting, use SIS commands (see [Output Configuration Commands](#) on page 25) or use the XTP System Configuration Software (see [Input/Output tab](#) on page 35).



**Figure 14.** Output Configuration Submenu

**Resolution** — Rotate the adjustment knobs to select a new resolution and refresh rate. The following table shows the available resolutions and refresh rates. The resolution and refresh rate can also be changed with SIS commands (see the **Output scaler rate** SIS commands on page 25).

Resolution	23.98 Hz	24 Hz	25 Hz	29.97 Hz	30 Hz	50 Hz	59.94 Hz	60 Hz	75 Hz
640x480						X		X	X
800x600						X		X	X
852x480						X		X	X
1024x768						X		X	X
1024x852						X		X	X
1024x1024						X		X	X
1280x768						X		X	X
1280x800						X		X	X
1280x1024						X		X	X
1360x765						X		X	X
1360x768						X		X	X
1365x768						X		X	X
1366x768						X		X	X
1365x1024						X		X	X
1440x900						X		X	X
1400x1050						X		X	
1680x1050						X		X	
1600x1200						X		X	
1920x1200						X		X	
480p							X	X	
576p						X			
720p			X	X	X	X	X	X*	
1080i						X	X	X	
1080p	X	X	X	X	X	X	X	X	
2K (2048x1080)	X	X	X	X	X	X	X	X	

\* Default

**Output format** — Shows the HDMI output format setting. This is not configurable from the OSD menu. To configure this setting, use SIS commands (see **HDMI output format** SIS commands on page 25) or use the XTP System Configuration Software (see **Input/Output tab** on page 35). The following formats are available:

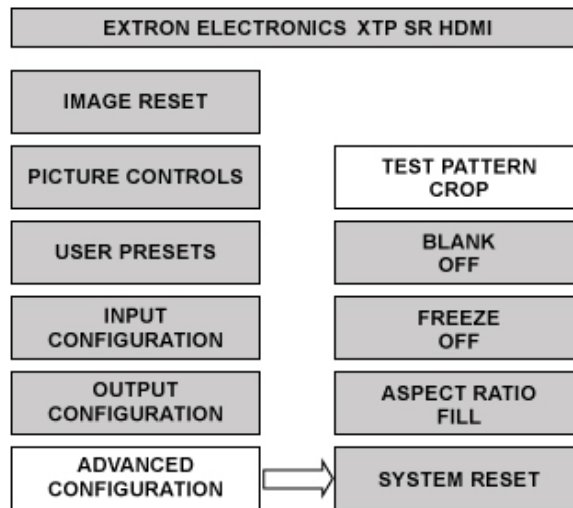
- Auto (based on display EDID)
- DVI RGB 444
- HDMI RGB 444 Full
- HDMI RGB 444 Limited
- HDMI YUV 444 Full
- HDMI YUV 444 Limited
- HDMI YUV 422 Full
- HDMI YUV 422 Limited

**Color bit depth** — Shows the color bit depth setting. This is not configurable from the OSD menu. To configure this setting, use SIS commands (see **Video bit depth** SIS commands on page 25) or use the XTP System Configuration Software (see **Input/Output tab** on page 35).



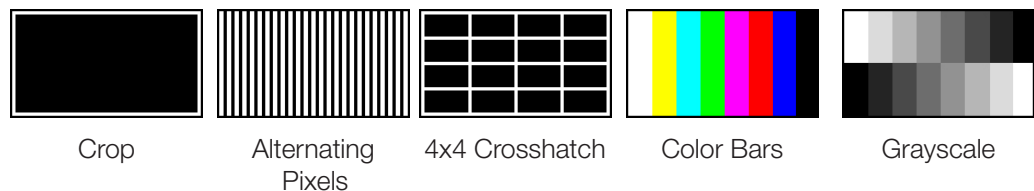
## Advanced Configuration Submenu

The Advanced Configuration submenu is used to set test patterns, screen blanking and freezing, aspect ratio, and system reset.



**Figure 15. Advanced Configuration Submenu**

**Test pattern** — Rotate the adjustment knobs to select a test pattern. The available test patterns are Crop, Alternating Pixels, 4x4 Crosshatch, Color Bars, and Grayscale. The default setting is Off.



**Figure 16. Test Pattern Examples**

**NOTE:** All test patterns include a single pixel border.

**Blank** — Rotate the adjustment knobs to turn the blank screen feature on or off. When on, the screen turns black, but the OSD menu is still available.

**Freeze** — Rotate the adjustment knobs to freeze or unfreeze the output.

**Aspect ratio** — Rotate the adjustment knobs to set the output aspect ratio to **Fill** or **Follow**. When the aspect ratio is set to **Fill**, the output is sized and centered to fill the entire output screen. When the aspect ratio is set to **Follow**, the native aspect ratio of the input is maintained.

**Factory reset** — Press and hold the **Enter** button to reset the device to factory defaults. The scaler retains the current firmware version.

## Front Panel Lockout Mode (Executive Mode)

Executive mode locks all front panel controls (RS-232 and USB control are still available). To enable or disable executive mode through the front panel, press and hold the **Menu** and **Enter** buttons simultaneously for about 2 seconds or until the Power LED blinks (see [Executive mode](#) SIS commands on page 27 or [XTP System Configuration Software](#) on page 29 for remote enabling or disabling of executive mode).

# SIS Configuration and Control

The XTP SR HDMI can be configured and controlled using the OSD menu (see [On-Screen Display Menu System](#) on page 13), Extron Simple Instruction Set (SIS) commands, or the XTP System Configuration Software (see [XTP System Configuration Software](#) on page 29). This section contains SIS communication details and SIS commands and responses when connected directly to an XTP SR HDMI. Topics in this section include:

- [Host Device Connection](#)
- [SIS Programming Guide](#)
- [Command and Response Tables for SIS Commands](#)

## Host Device Connection

Use a computer running the Extron DataViewer utility or HyperTerminal, or use a control system to make serial control of the receiver possible. To connect directly to an XTP SR HDMI, connect the computer to the XTP SR HDMI through the front panel USB Config port (see [Config Port](#) on page 12) or the rear panel Remote RS-232 connector (see [Remote RS-232 connector](#) on page 6). The protocol for the serial port is as follows: 9600 baud, no parity, 8 data bits, 1 stop bit, no flow control.

## SIS Programming Guide

### Host-to-Device and Device-to-Host Communication

SIS commands consist of one or more characters per field. No special characters are required to begin or end a command sequence. When the XTP SR HDMI determines that a command is valid, it executes the command and sends a response to the host device. All responses from the receiver to the host end with a carriage return and a line feed (CR/LF = **↵**), which signals the end of the response character string. A string is one or more characters.

### Device-Initiated Message

When the switcher is connected through the serial port only and a local event occurs, the device responds by sending a message to the host.

The following copyright message is displayed after a power cycle via RS-232.

© Copyright YYYY, Extron Electronics XTP SR HDMI Vx.xx, 60-1199-01<sup>↵</sup>

YYYY is the year. Vx.xx is the firmware version number.

## Error Responses

When the XTP SR HDMI receives an SIS command and determines that it is valid, it performs the command and sends the corresponding response to the host device. If the command is determined invalid or contains invalid parameters, the receiver returns an error response to the host. The error response codes are:

- E10 = Invalid command
- E11 = Invalid preset number
- E13 = Invalid parameter
- E14 = Not valid for this configuration
- E17 = Invalid command for signal type
- E22 = Busy

## Using Command and Response Tables for SIS Commands

The **command and response tables** begin on page 23. Figure 17 shows the hexadecimal equivalent of ASCII characters used in the command and response tables.

**NOTE:** Uppercase and lowercase text can be used interchangeably unless otherwise stated.

	ASCII to Hex Conversion Table																		
Space →	20	!	21	"	22	#	23	\$	24	%	25	&	26	'	27	Esc 1B	CR 0D	LF 0A	
	( 28	) 29	* 2A	+ 2B	, 2C	- 2D	. 2E	/ 2F	0 30	1 31	2 32	3 33	4 34	5 35	6 36	7 37			
	8 38	9 39	: 3A	; 3B	< 3C	= 3D	> 3E	? 3F	@ 40	A 41	B 42	C 43	D 44	E 45	F 46	G 47			
	H 48	I 49	J 4A	K 4B	L 4C	M 4D	N 4E	O 4F	P 50	Q 51	R 52	S 53	T 54	U 55	V 56	W 57			
	X 58	Y 59	Z 5A	[ 5B	\ 5C	] 5D	^ 5E	_ 5F	` 60	a 61	b 62	c 63	d 64	e 65	f 66	g 67			
	h 68	i 69	j 6A	k 6B	l 6C	m 6D	n 6E	o 6F	p 70	q 71	r 72	s 73	t 74	u 75	v 76	w 77			
	x 78	y 79	z 7A	{ 7B	7C	} 7D	~ 7E	DEL 7F											

**Figure 17. ASCII to Hexadecimal Conversion**

## Symbol Definitions

- ↵ = Carriage return with line feed
- ← or | = Carriage return (no line feed)
- = Space character
- Esc or W = Escape key
- X34 = Output scaler rate and refresh rate See the table below.

<b>SIS Variables for Output Resolution and Refresh Rate Combinations (where X34 = 10-90)</b>									
<b>Resolution</b>	<b>23.98 Hz</b>	<b>24 Hz</b>	<b>25 Hz</b>	<b>29.97 Hz</b>	<b>30 Hz</b>	<b>50 Hz</b>	<b>59.94 Hz</b>	<b>60 Hz</b>	<b>75 Hz</b>
640x480						10		11	12
800x600						13		14	15
852x480						16		17	18
1024x768						19		20	21
1024x852						22		23	24
1024x1024						25		26	27
1280x768						28		29	30
1280x800						31		32	33
1280x1024						34		35	36
1360x765						37		38	39
1360x768						40		41	42
1365x768						43		44	45
1366x768						46		47	48
1365x1024						49		50	51
1440x900						52		53	54
1400x1050						55		56	
1680x1050						57		58	
1600x1200						59		60	
1920x1200						61		62	
480p							63	64	
576p						65			
720p			66	67	68	69	70	71*	
1080i						72	73	74	
1080p	75	76	77	78	79	80	81	82	
2048x1080	83	84	85	86	87	88	89	90	

\* = default

## Command and Response Tables for SIS Commands

Command	ASCII Command (host to XTP)	Response (XTP to host)	Additional Description
<b>Picture Adjustment Commands</b>			
<b>Video Mute</b>			
Mute video and sync	2B	Vmt2←	Mutes video and sync.
Mute video	1B	Vmt1←	Mute the selected input.
Unmute video	0B	Vmt0←	Display the selected input.
View mute status	B	Vmt[X6]←	View mute status.
<b>Contrast</b>			
Set contrast	[Esc][X7]CONT←	Cont[X7]←	Set the contrast to [X7].
Increase contrast	[Esc]+CONT←	Cont[X7]←	Increase the contrast level.
Decrease contrast	[Esc]-CONT←	Cont[X7]←	Decrease the contrast level.
View contrast level	[Esc]CONT←	Cont[X7]←	View the contrast level.
<b>Brightness</b>			
Set brightness	[Esc][X7]BRIT←	Brit[X7]←	Set brightness level to [X7].
Increase brightness	[Esc]+BRIT←	Brit[X7]←	Increase brightness level.
Decrease brightness	[Esc]-BRIT←	Brit[X7]←	Decrease brightness level.
View brightness	[Esc]BRIT←	Brit[X7]←	View the brightness level.
<b>NOTES:</b>			
[X6] = Video mute		0 = unmute (default)	
		1 = mute video	
		2 = mute video and sync	
[X7] = Picture adjustment		0 to 255 (128 = default)	

Command	ASCII Command (host to XTP)	Response (XTP to host)	Additional Description
<b>Detail filter</b>			
Set detail level	<b>Esc</b> <b>[X7]</b> HDET ←	Hdet <b>[X7]</b> ↵	Set the detail level to <b>[X7]</b> .
Increase detail level	<b>Esc</b> +HDET ←	Hdet <b>[X7]</b> ↵	Increase the detail level.
Decrease detail level	<b>Esc</b> -HDET ←	Hdet <b>[X7]</b> ↵	Decrease the detail level.
View detail level	<b>Esc</b> HDET ←	Hdet <b>[X7]</b> ↵	View the detail level.
<b>Horizontal shift</b>			
Set horizontal shift	<b>Esc</b> <b>[X8]</b> HCTR ←	Hctr <b>[X8]</b> ↵	Set horizontal position to <b>[X8]</b> . The default value is 32768).
Increase horizontal shift	<b>Esc</b> +HCTR ←	Hctr <b>[X8]</b> ↵	Shift the image right.
Decrease horizontal shift	<b>Esc</b> -HCTR ←	Hctr <b>[X8]</b> ↵	Shift the image left.
View horizontal shift	<b>Esc</b> HCTR ←	Hctr <b>[X8]</b> ↵	View the horizontal position.
<b>Vertical shift</b>			
Set vertical shift	<b>Esc</b> <b>[X9]</b> VCTR ←	Vctr <b>[X9]</b> ↵	Set vertical position to <b>[X9]</b> . The default value is 32768).
Increase vertical shift	<b>Esc</b> +VCTR ←	Vctr <b>[X9]</b> ↵	Shift the image down.
Decrease vertical shift	<b>Esc</b> -VCTR ←	Vctr <b>[X9]</b> ↵	Shift the image up.
View vertical shift	<b>Esc</b> VCTR ←	Vctr <b>[X9]</b> ↵	View the vertical position.
<b>Horizontal size</b>			
Set horizontal size	<b>Esc</b> <b>[X8]</b> HSIZ ←	Hsiz <b>[X8]</b> ↵	Set image width to <b>[X8]</b> . The default value is based on the selected output resolution.
Increase horizontal size	<b>Esc</b> +HSIZ ←	Hsiz <b>[X8]</b> ↵	Increase the image width.
Decrease horizontal size	<b>Esc</b> -HSIZ ←	Hsiz <b>[X8]</b> ↵	Decrease the image width.
View horizontal size	<b>Esc</b> HSIZ ←	Hsiz <b>[X8]</b> ↵	View the image width.
<b>Vertical size</b>			
Set vertical size	<b>Esc</b> <b>[X9]</b> VSIZ ←	Vsiz <b>[X9]</b> ↵	Set image height to <b>[X9]</b> . The default value is based on the selected output resolution.
Increase vertical size	<b>Esc</b> +VSIZ ←	Vsiz <b>[X9]</b> ↵	Increase the image height.
Decrease vertical size	<b>Esc</b> -VSIZ ←	Vsiz <b>[X9]</b> ↵	Decrease the image height.
View vertical size	<b>Esc</b> VSIZ ←	Vsiz <b>[X9]</b> ↵	View the image height.
<b>Image reset</b>			
Execute an image reset	A	Img ↵	Reset shift and size settings to the default values.

#### NOTES:

<b>[X7]</b> = Picture adjustment	∅ to 255 (128 = default)
<b>[X8]</b> = Horizontal position or size	∅ to 65535
<b>[X9]</b> = Vertical position or size	∅ to 65535

Command	ASCII Command (host to XTP)	Response (XTP to host)	Additional Description
<b>Output Configuration Commands</b>			
<b>Output scaler rate</b>			
Set output rate	<b>[Esc]</b> <b>[X34]</b> RATE ←	Rate <b>[X34]</b> ↵	Select output resolution and refresh rate.
View output rate	<b>[Esc]</b> RATE ←	Rate <b>[X34]</b> ↵	Show selected output rate.
<b>HDMI output format</b>			
Set HDMI output format	<b>[Esc]</b> <b>[X10]</b> VTPO ←	Vtpo <b>[X10]</b> ↵	Set the output color space and format.
View HDMI output format	<b>[Esc]</b> VTPO ←	Vtpo <b>[X10]</b> ↵	View the output color space and format.
<b>Test pattern</b>			
<b>NOTE:</b> See <a href="#">figure 16</a> on page 19 for examples of the available test patterns.			
Set pattern	<b>[X11]</b> J	Tst <b>[X11]</b> ↵	Set the test pattern to <b>[X11]</b> .
View test pattern	J	Tst <b>[X11]</b> ↵	View the current test pattern.
<b>Video bit depth</b>			
Set video bit depth	<b>[Esc]</b> V <b>[X12]</b> BITD ←	Bitdv <b>[X12]</b> ↵	Set the video bit depth.
View video bit depth	<b>[Esc]</b> VBITD ←	Bitdv <b>[X12]</b> ↵	View the video bit depth.
<b>Freeze</b>			
Enable	1F	Frz1 ↵	Freeze the selected input.
Disable	ØF	FrzØ ↵	Unfreeze the selected input.
View freeze status	F	Frz <b>[X1]</b> ↵	View the freeze status.

**NOTES:**

**[X1]** = Enable or disable

Ø = disabled or off (default for freeze command)  
1 = enabled or on

**[X10]** = HDMI output format

Ø = auto (default)  
1 = DVI RGB 444  
2 = HDMI RGB 444 “Full”  
3 = HDMI RGB 444 “Limited”  
4 = HDMI YUV 444 “Full”  
5 = HDMI YUV 444 “Limited”  
6 = HDMI YUV 422 “Full”  
7 = HDMI YUV 422 “Limited”

**[X11]** = Test pattern

Ø = off (default)  
1 = crop  
2 = alternating pixels  
3 = crosshatch  
4 = colorbars  
5 = greyscale

**[X12]** = Video bit depth

Ø = auto (default)  
1 = 8 bit

**[X34]** = Output scaler rate and refresh rate

See the [table](#) on page 22.

Command	ASCII Command (host to XTP)	Response (XTP to host)	Additional Description
<b>Screen saver</b>			
Set timeout duration	<b>[Esc]</b> <b>[X13]</b> SSAV ←	Ssav <b>[X13]</b> * <b>[X15]</b> ←	Set the required duration of inactivity before the screen saver activates.
View timeout duration	<b>[Esc]</b> SSAV ←	Ssav <b>[X13]</b> * <b>[X15]</b> ←	View the required duration of inactivity before the screen saver activates and how much time is left before it activates.
<b>Audio Configuration Commands</b>			
<b>Audio mute</b>			
Mute all	7Z	Amt7 ←	Mutes all audio outputs.
Mute S/PDIF and analog	6Z	Amt6 ←	Mutes S/PDIF and analog audio outputs.
Mute S/PDIF and HDMI	5Z	Amt5 ←	Mutes S/PDIF and HDMI audio outputs.
Mute S/PDIF	4Z	Amt4 ←	Mutes S/PDIF audio output.
Mute analog and HDMI	3Z	Amt3 ←	Mute analog and HDMI audio outputs.
Mute analog audio	2Z	Amt2 ←	Mute the analog audio output.
Mute HDMI audio	1Z	Amt1 ←	Mute the HDMI audio output.
Unmute all	ØZ	AmtØ ←	Unmute all audio outputs.
View mute status	Z	Amt <b>[X16]</b> ←	View the audio mute status.
<b>Volume</b>			
Set volume	<b>[X17]</b> V	Vol <b>[X17]</b> ←	Set output volume to <b>[X17]</b> .
Increase volume level	+V	Vol <b>[X17]</b> ←	Increase the audio volume.
Decrease volume level	-V	Vol <b>[X17]</b> ←	Decrease audio volume.
View volume level	V	Vol <b>[X17]</b> ←	View current volume setting.
<b>Preset Commands</b>			
<b>User presets</b>			
Recall preset	<b>[X18]</b> .	Rpr <b>[X18]</b> ←	Recall user preset <b>[X18]</b> .
Save preset	<b>[X18]</b> ,	Spr <b>[X18]</b> ←	Save the current settings to user preset <b>[X18]</b> .

**NOTES:**

**[X13]** = Screen saver timeout duration

Ø = never time out (default)

1-255 in 1 minute steps

**[X15]** = Time in minutes until timeout

Ø = screen saver never times out or the screen saver is currently enabled

1-255 in 1 minute steps

**[X16]** = Audio mute

Ø = unmute (default)

1 = mute HDMI audio output

2 = mute analog audio output

3 = mute HDMI and analog audio outputs

4 = mute S/PDIF audio output

5 = mute S/PDIF and HDMI audio outputs

6 = mute S/PDIF and analog audio outputs

7 = mute all audio outputs

**[X17]** = Volume

Ø to 64 (64 = default)

**[X18]** = User preset

1 to 8



Command	ASCII Command (host to XTP)	Response (XTP to host)	Additional Description
<b>Advanced Configuration Commands</b>			
<b>Executive mode</b>			
Enable executive mode	1X	Exe1↵	Lock the entire front panel.
Disable executive mode	ØX	ExeØ↵	Unlock the front panel.
View executive mode status	X	Exe[X1]↵	View the executive mode status.
<b>Relay control</b>			
Pulse relay	[X20]*3*[X21]0	Rly[X20]*[X1]↵	Pulse relay [X20].
Toggle relay	[X20]*20	Rly[X20]*[X1]↵	Toggle relay [X20].
Turn relay on	[X20]*10	Rly[X20]*1↵	Turn relay [X20] on.
Turn relay off	[X20]*Ø0	Rly[X20]*Ø↵	Turn relay [X20] off.
View relay status	[X20]0	Rly[X20]*[X1]↵	View relay status.
<b>Aspect ratio</b>			
Set aspect ratio to Fill	[Esc]1ASPR↵	Aspr1↵	Fill the entire output raster.
Set aspect ratio to Follow	[Esc]2ASPR↵	Aspr2↵	Use the native aspect ratio of the input.
View aspect ratio setting	[Esc]ASPR↵	Aspr[X23]↵	View the current aspect ratio setting.
<b>Switch mute</b>			
<b>NOTE:</b> The basic mute specifies the mute duration when switching. The advanced mute adds an additional mute to help compensate for switching between different input resolutions.			
Set switch mute	[Esc][X32]*[X33]AUTB↵	Autb[X32]*[X33]↵	Set the mute duration between switching inputs.
View switch mute setting	[Esc]AUTB↵	Autb[X32]*[X33]↵	View the basic and advanced mute durations between switching inputs.
<b>NOTES:</b>			
[X1] = Enable or disable		Ø = disabled or off (default) 1 = enabled or on	
[X20] = Relay		1 = relay 1 2 = relay 2	
[X21] = Pulse time		1 to 65535 (in 16 ms steps)	
[X23] = Input aspect ratio		1 = fill (default) 2 = follow	
[X32] = Basic mute		Ø-255 where 1 step = 100 ms or 10 steps = 1 s (Ø = default)	
[X33] = Advanced mute		Ø-255 where 1 step = 100 ms or 10 steps = 1 s (Ø = default)	

Command	ASCII Command (XTP to host)	Response (host to XTP)	Additional Description
<b>HDCP mode</b>			
Set HDCP mode	[Esc] S[X31] HDCP ←	HdcpS[X31] ↵	Set the HDCP mode to [X31].
View HDCP mode setting	[Esc] SHDCP ←	HdcpS[X31] ↵	View the HDCP mode setting.
<b>HDCP status</b>			
View HDMI output status	[Esc] OHDCP ←	HdcpO[X25] ↵	Query the HDCP status of the output.
<b>Factory defaults</b>			
System reset	[Esc] ZXXX ←	Zpx ↵	Resets unit to factory default.
<b>Information Requests</b>			
View input signal status	OLS	Frq[X30] ↵	View the input signal status.
View firmware version	Q	x.xx ↵	View the firmware version.
View firmware build	*Q	x.xx.xxxx ↵	View the firmware build version.
View part number	N	60-1199-01 ↵	View the device part number.
<b>NOTES:</b>			
[X25] = HDCP status		0, 2, 4, 6 = no sink device detected 1, 3, 5 = sink detected with no HDCP encryption 7 = sink detected with HDCP encryption	
[X30] = Input signal status		0 = no input 1 = input detected	
[X31] = HDCP mode		0 = auto or encrypt the output only when required by the input (default) 1 = always encrypt the output	

# XTP System Configuration Software

The XTP System Configuration Software is convenient, user-friendly control software used for configuring an XTP system or individual XTP devices. This section contains installation and configuration procedures for the XTP System Configuration Software. The XTP SR HDMI can also be controlled with the OSD menu (see [On-Screen Display Menu System](#) on page 13) or SIS commands (see [SIS Configuration and Control](#) on page 20). Topics in this section include:

- [Installing the XTP System Configuration Software](#)
- [Using the XTP System Configuration Software](#)

## Installing the XTP System Configuration Software

The XTP System Configuration Software is available for download on the Extron website, [www.extron.com](http://www.extron.com).

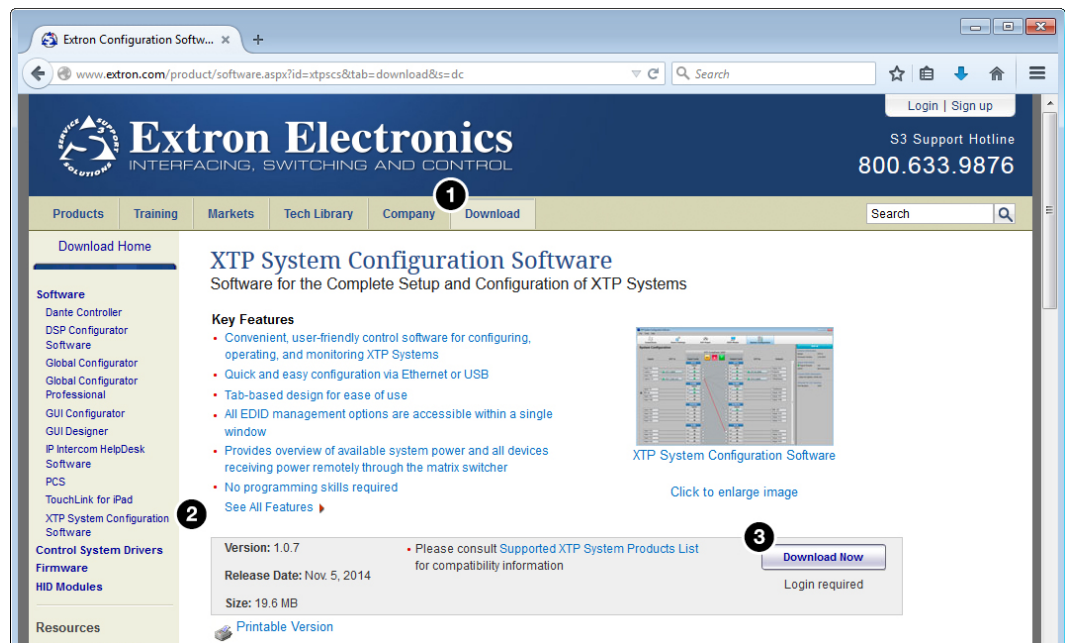


Figure 18. Extron Website Download Page

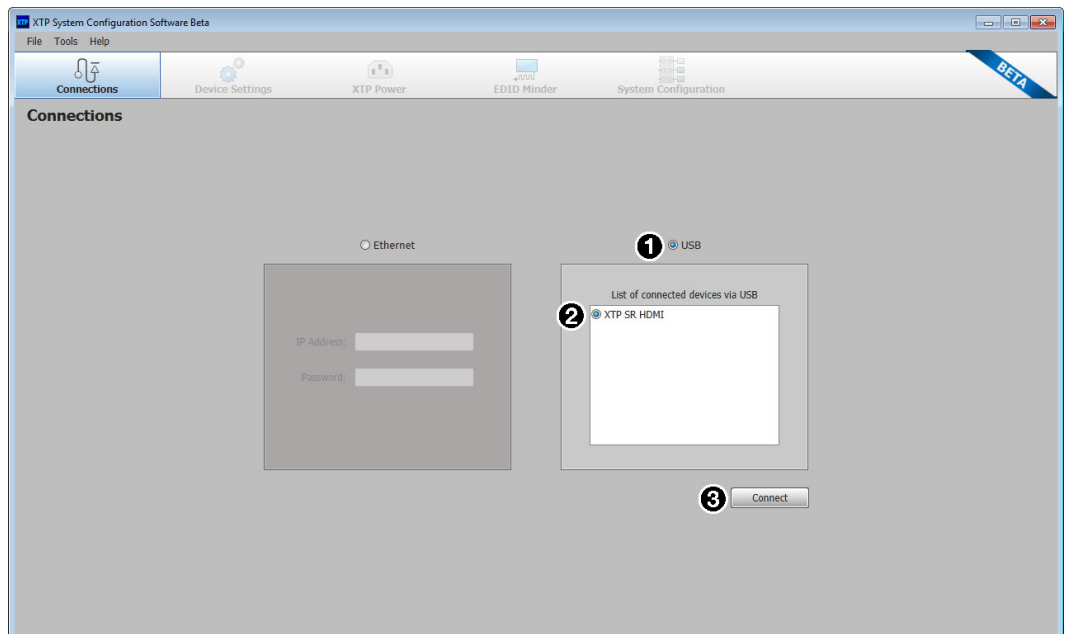
1. On the Extron website, click the **Download** tab (see figure 18, ❶).
2. From the left sidebar, click the **XTP System Configuration Software** link (see figure 18, ❷).
3. Click the **Download Now** button (see figure 18, ❸).
4. Submit any required information to start the download. Note where the file is saved.
5. Open the executable (.exe) file from the location where it was saved.
6. Follow the instructions that appear on the screen. By default, the installation creates a directory in the appropriate Program Files folder named “Extron Electronics\XTP System Configuration.”

## Using the XTP System Configuration Software

The XTP SR HDMI can be controlled directly from the front panel Config port or remotely from a connected XTP matrix switcher.

### Connections

When opening the XTP System Configuration Software, the Connections screen opens first. This screen is used to establish communication with an XTP device through a USB connection (see **Config port** on page 12). Ensure the receiver is connected and powered on before attempting to connect to it.



**Figure 19. Connections Screen**

1. From the **Connections** screen in the software, select the **USB** radio button (see figure 19, ❶).
2. Select the connected device to be controlled from the displayed list (see figure 19, ❷).
3. Click the **Connect** button. The **Device Settings** screen opens (see figure 19, ❸).

## Menu Bar

The menu bar contains three menus for configuring software settings.

### File menu

The **File** menu contains options for disconnecting from the switcher and exiting the program. To access the menu, click the **File** menu.

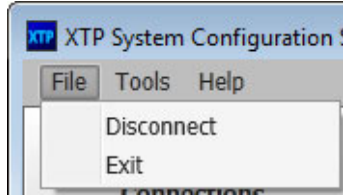


Figure 20. File Menu

### Disconnect

This option disconnects the connected device from the XTP System Configuration Software. From the **File** menu, select **Disconnect**. The **Connections** screen opens.

**NOTE:** If the device is already disconnected, the **Disconnect** option is disabled until a device is connected.

### Exit

This option disconnects the switcher from the software and closes the application. From the **File** menu, select **Exit**. The application closes.

### Tools menu

The **Tools** menu contains an option for updating firmware. To access this menu, click the **Tools** menu.

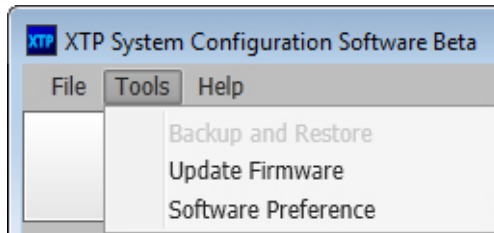


Figure 21. Tools Menu

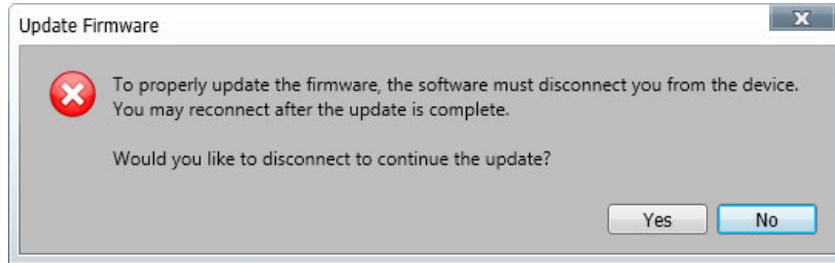
**NOTE:** The **Backup and Restore** and **Software Preference** options are not available when directly connected to the XTP SR HDMI.

## Update Firmware

This option uploads firmware from the host device to the connected device.

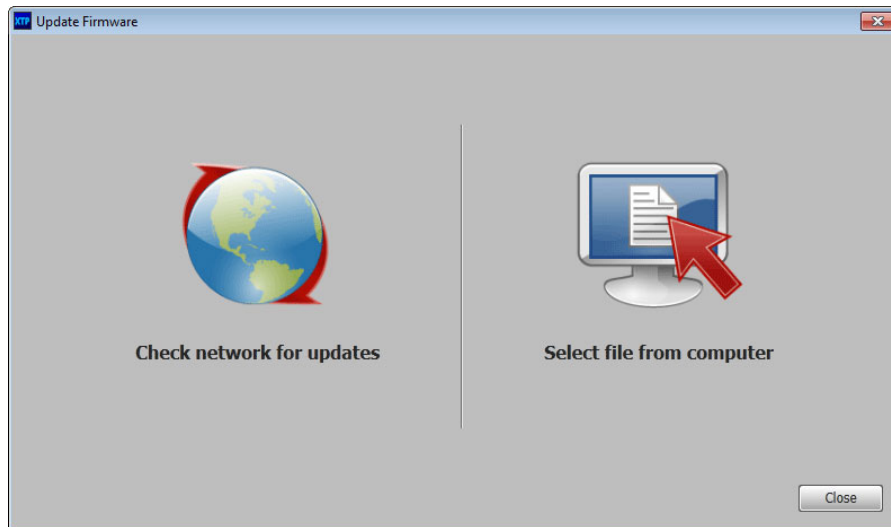
**NOTE:** If necessary, download new firmware from the Extron website (see [Downloading Firmware](#) on page 45).

1. From the **Tools** menu, select **Update Firmware**. A dialog box opens to ask permission to disconnect from the device.



**Figure 22. Confirm Disconnect Dialog Box**

2. Click the **Yes** button to disconnect from the device and continue with the firmware update process. The Update Firmware dialog box opens.

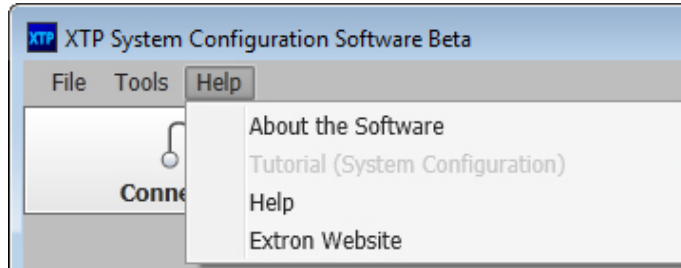


**Figure 23. Update Firmware Dialog Box**

3. Click the **Check network for updates** icon to search the LAN or WAN for firmware files or click the **Select file from computer** icon to select a firmware file from the connected host device. The Browse dialog box opens.
4. Select the desired firmware file and click the **Open** button.
5. Click the **Close** button after the firmware finishes updating.

## Help menu

The **Help** menu contains a way to access XTP System Configuration Software information, a link to the help file, and a link to the Extron website.

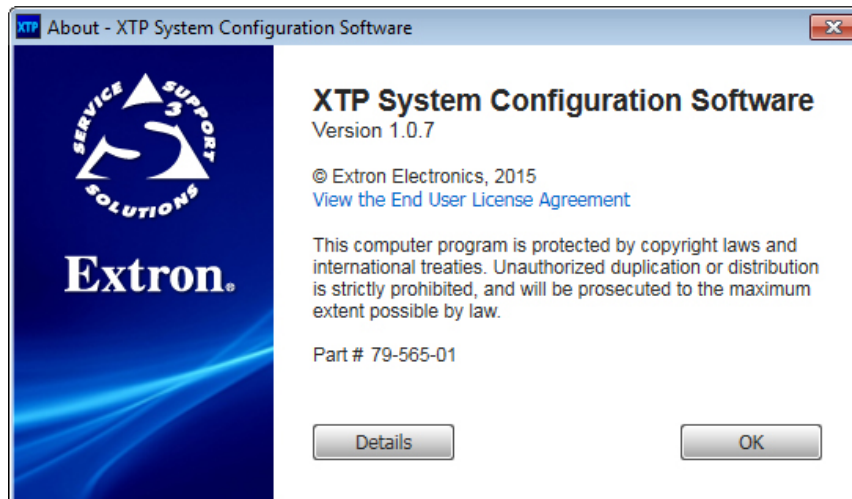


**Figure 24. Help Menu**

**NOTE:** The **Tutorial (System Configuration)** option is not available when directly connected to the XTP SR HDMI.

## About the Software

This option provides basic information about the XTP System Configuration Software, including version number and copyright information.



**Figure 25. About - XTP Dialog Box**

1. From the **Help** menu, select **About the Software**. The About - XTP dialog box opens.
2. Click the **Details** button for more information.
3. Click the **OK** button to close the dialog box.

## Help

This option opens the *XTP System Configuration Software* help file in a Web browser. From the **Help** menu, select **Help**.

## Extron Website

This option opens the Extron website in a Web browser. From the **Help** menu, select **Extron Website**.

## Device Settings

The **Device Settings** screen allows a user to view and edit various device settings for the receiver directly connected to the PC running the XTP software. Click the **Device Settings** icon (see figure 26, ①) on the Global Navigation Bar to open the **Device Settings** screen.

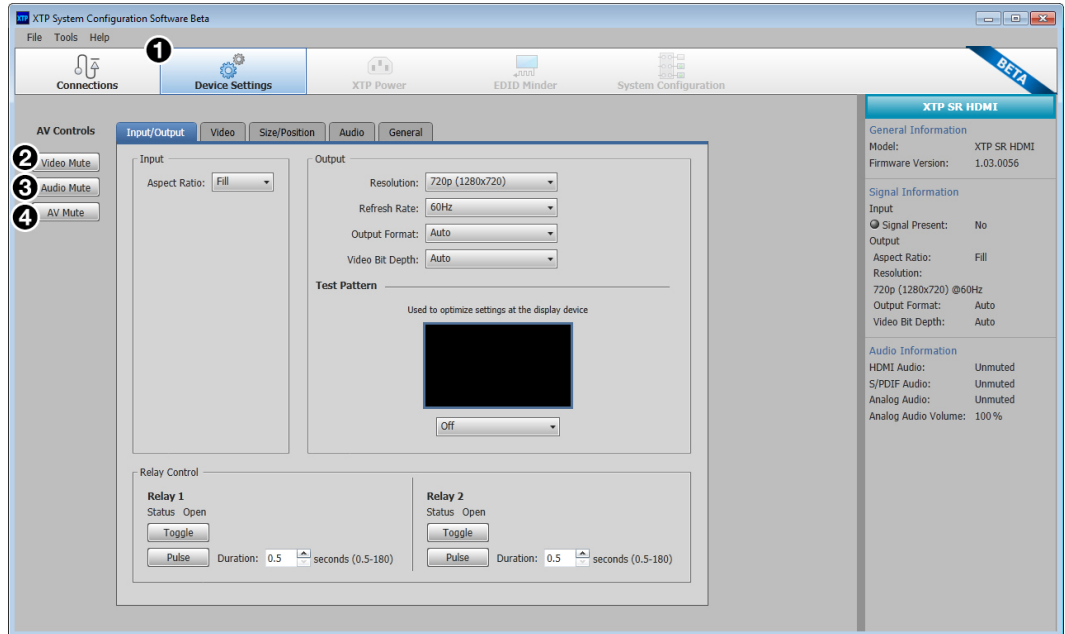
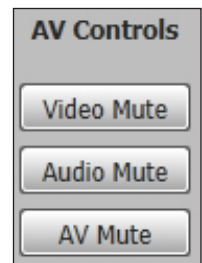


Figure 26. Device Settings Screen

### AV Controls panel

The **AV Controls** panel, located on the left, is used to perform audio or video mutes.

- ② **Video mute** — Click the **Video Mute** button to mute or unmute the video output.
- ③ **Audio mute** — Click the **Audio Mute** button to mute or unmute the audio output.
- ④ **Audio and video mute** — Click the **AV Mute** button to mute or unmute audio and video output.



**NOTE:** The mute buttons turn red when they are enabled.



## Input/Output tab

Click the **Input/Output** tab (see figure 27, ❶) to open the Input/Output screen. This screen contains input and output configurations as well as relay controls.

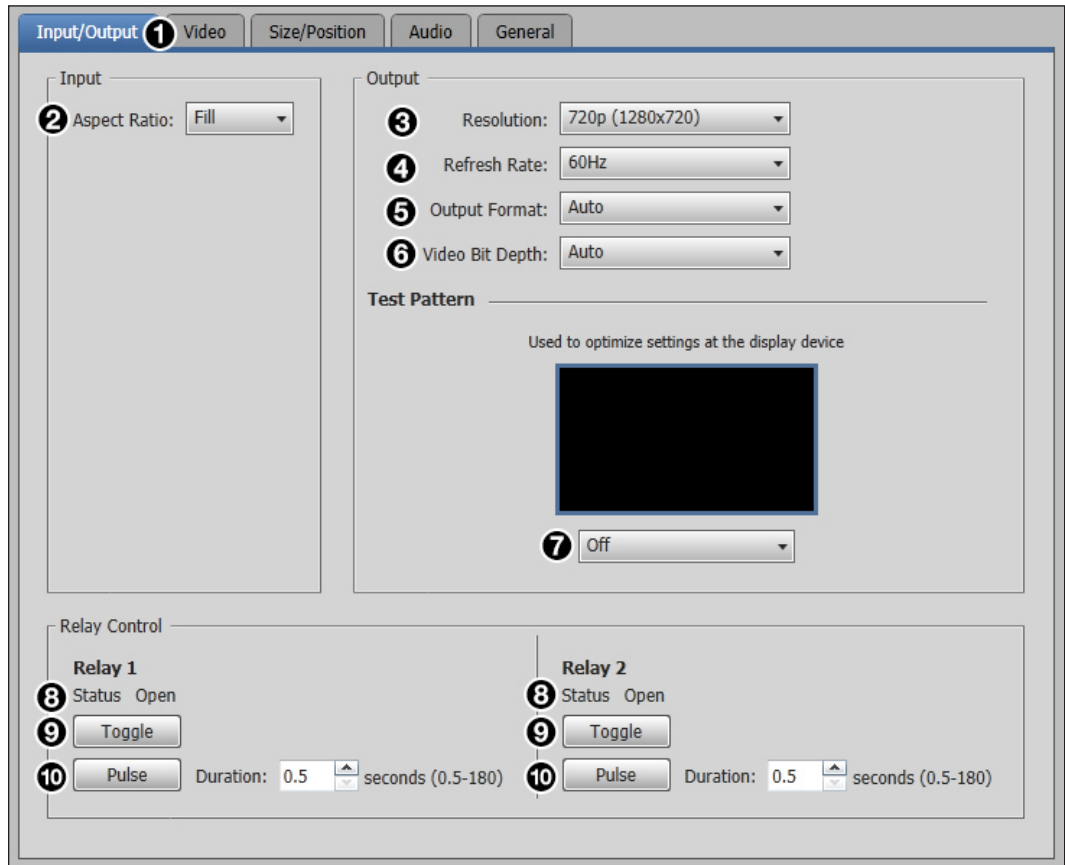
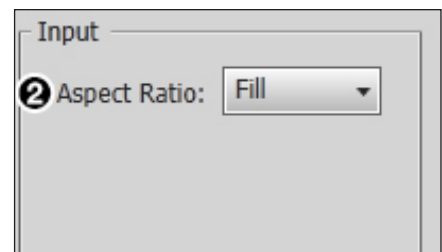


Figure 27. Input/Output Tab

### Input panel

The Input panel on the Input/Output screen is used to set the aspect ratio.

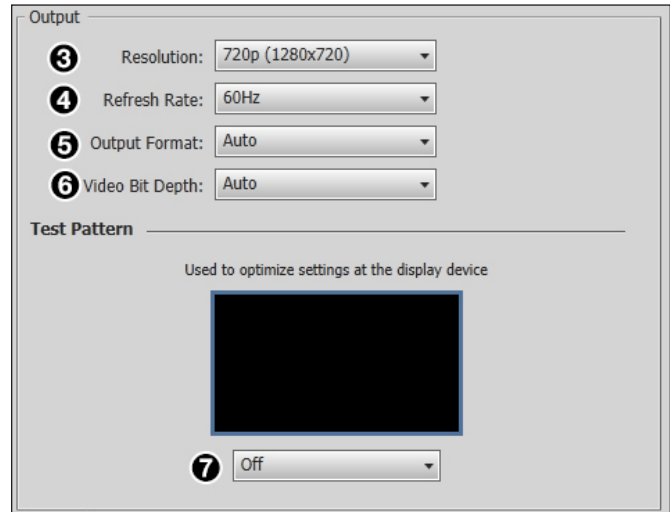
- ❷ **Aspect Ratio** — From the **Aspect Ratio** drop-down list, select **Fill** or **Follow**.
- **Fill** — Scales the input signal to fill the entire video output.
  - **Follow** — Maintains the signal aspect ratio, with respect to the current output resolution.



## Output panel

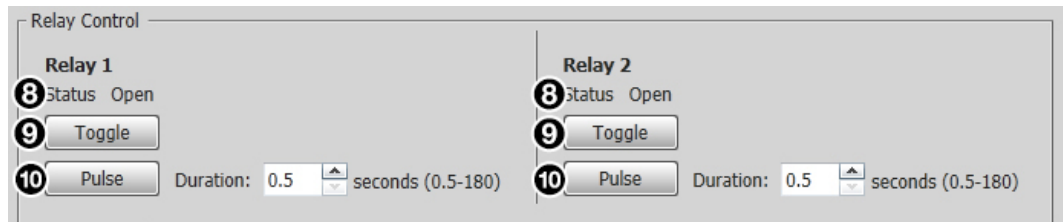
The Output panel on the Input/Output screen is used to set the resolution, refresh rate, and test pattern.

- 3 **Resolution** — From the **Resolution** drop-down list, select the desired resolution.
- 4 **Refresh Rate** — From the **Refresh Rate** drop-down list, select the desired refresh rate.
- 5 **Output Format** — Sets the output format to a specific setting or to automatically select a format based on the display EDID.
- 6 **Video Bit Depth** — Sets the color bit depth of the output signal.
- 7 **Test Pattern** — From the drop-down list below the test pattern preview, select the desired test pattern (see [figure 16](#) on page 19 for examples of the available test patterns).



## Relay Control panel

The Relay Control panel on the Input/Output screen is used to toggle or pulse relay 1 or 2.

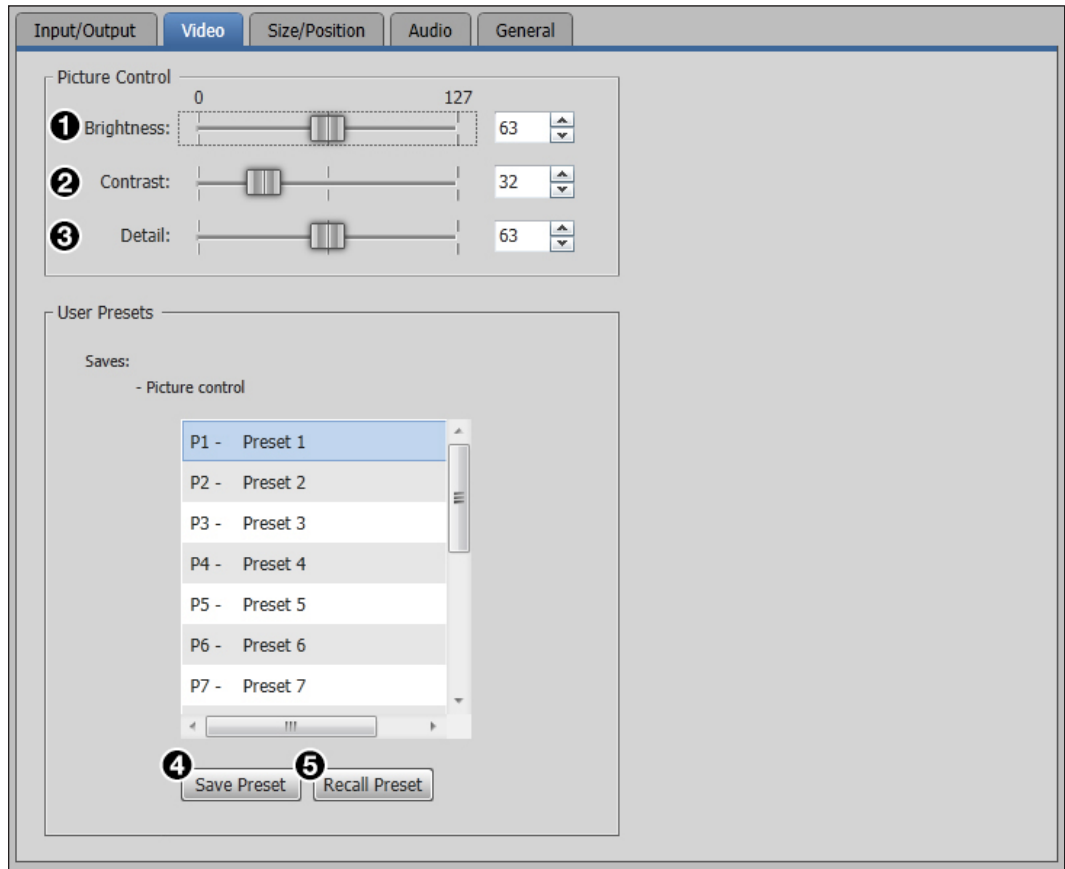


**Figure 28. Relay Control Panel**

- 8 **Status** — Displays whether the relay is open or closed.
- 9 **Toggle** — Click the **Toggle** button in the desired relay panel to toggle either relay open or closed.
- 10 **Pulse** — In the desired relay panel, select a length of time from the **Duration** field. Click the **Pulse** button to pulse the relay for the time specified in the **Duration** field.

## Video tab

Click the **Video** tab to open the **Video** screen. This screen contains picture control settings and user preset management options.



**Figure 29. Video Tab**

### **Picture Control panel**

The **Picture Control** panel on the **Video** screen is used to adjust brightness, contrast, and detail settings. Adjust picture control settings in one of the following ways:

- Click and drag the handle of the slider for the desired setting.
- Click in the desired field to the right of the slider and enter a new value.
- Click the **Up** and **Down** arrows to the right of the desired setting.

**1 Brightness** — Adjust the brightness level of the output.

**2 Contrast** — Adjust the contrast level of the output.

**3 Detail** — Adjust the detail level of the output.

### **User Presets panel**

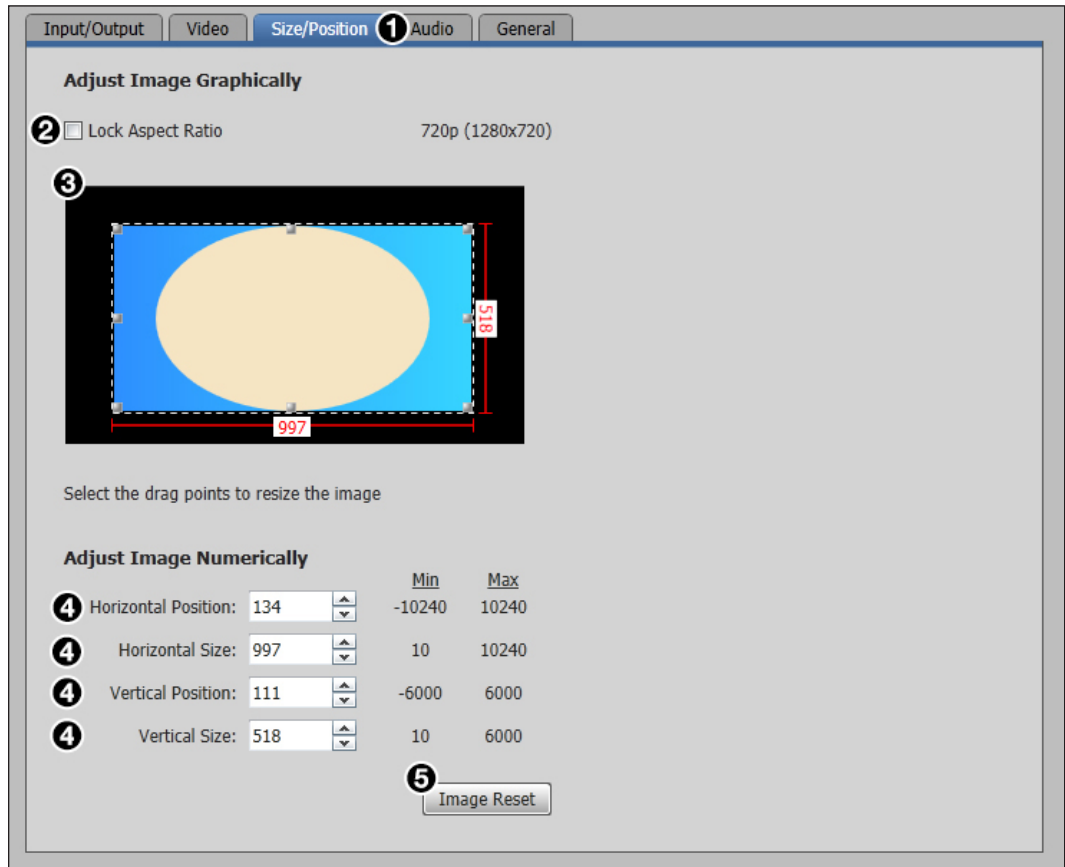
User presets save picture control settings that can be recalled later.

**4 Save Preset** — Select a preset from the list of presets and click the **Save Preset** button.

**5 Recall Preset** — Select the desired preset from the list of presets and click the **Recall Preset** button.

## Size and Position tab

Click the **Size/Position** tab (see figure 30, ①) to open the **Size** and **Position** screen. This screen contains several different ways to adjust the size and position of the output.



**Figure 30. Size/Position Tab**

### To adjust the size and position graphically:

If desired, click the **Lock Aspect Ratio** check box (②) to constrain proportions.

1. Click and drag the drag points of the sample image in the **Preview** box (③) to resize the image within the designated space (defined by the black area in figure 30 above).
2. Click anywhere inside the sample image and drag it anywhere within the **Preview** box.

### To adjust the size and position numerically:

1. Enter a value or click the **Up** and **Down** arrows in the **Horizontal Size** and **Vertical Size** fields (④).
2. Enter a value or click the **Up** and **Down** arrows in the **Horizontal Position** and **Vertical Position** fields (④).

### To reset all position and size settings:

Click the **Image Reset** button (⑤).

## Audio tab

Click the **Audio** tab (see figure 31, ①) to open the Audio screen. This screen contains audio output settings.

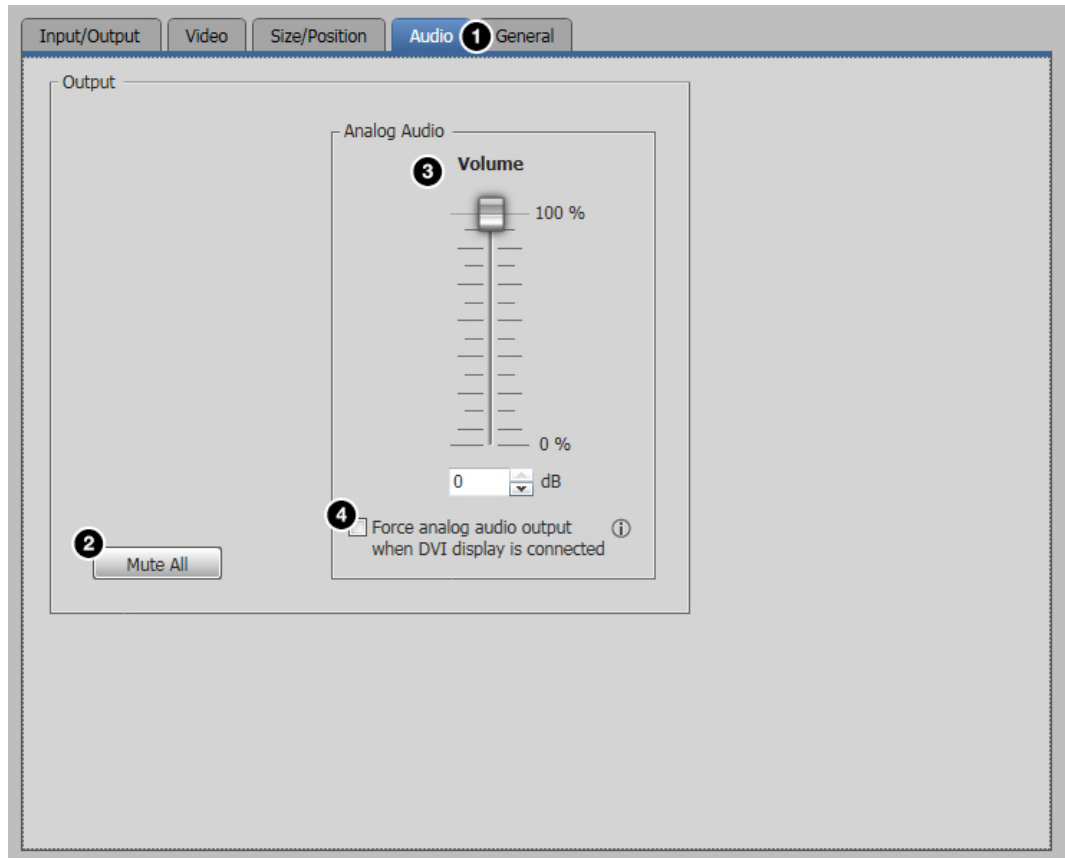


Figure 31. Audio Tab

### Output panel

The **Output** panel on the **Audio** screen is used to mute or unmute all audio output and control volume on the analog audio output.

- ② **Mute All** — Click the **Mute All** button to mute or unmute all audio output. When muted, the button turns red.
- ③ **Volume slider** — Click and drag the handle of the **Volume** slider, enter a value in the **Volume** field, or click the **Up** and **Down** arrows to adjust analog audio output volume.
- ④ **Analog audio for DVI displays** — Select the check box below the **Volume** slider to send analog audio to a display receiving DVI signals.

**NOTE:** When this check box is selected, Extron EDID Minder does not show the EDID information of the connected display. It shows a 720p Extron EDID.

## General tab

Click the **General** tab (see figure 32, ①) to open the General screen. This screen contains executive mode and video and sync settings.

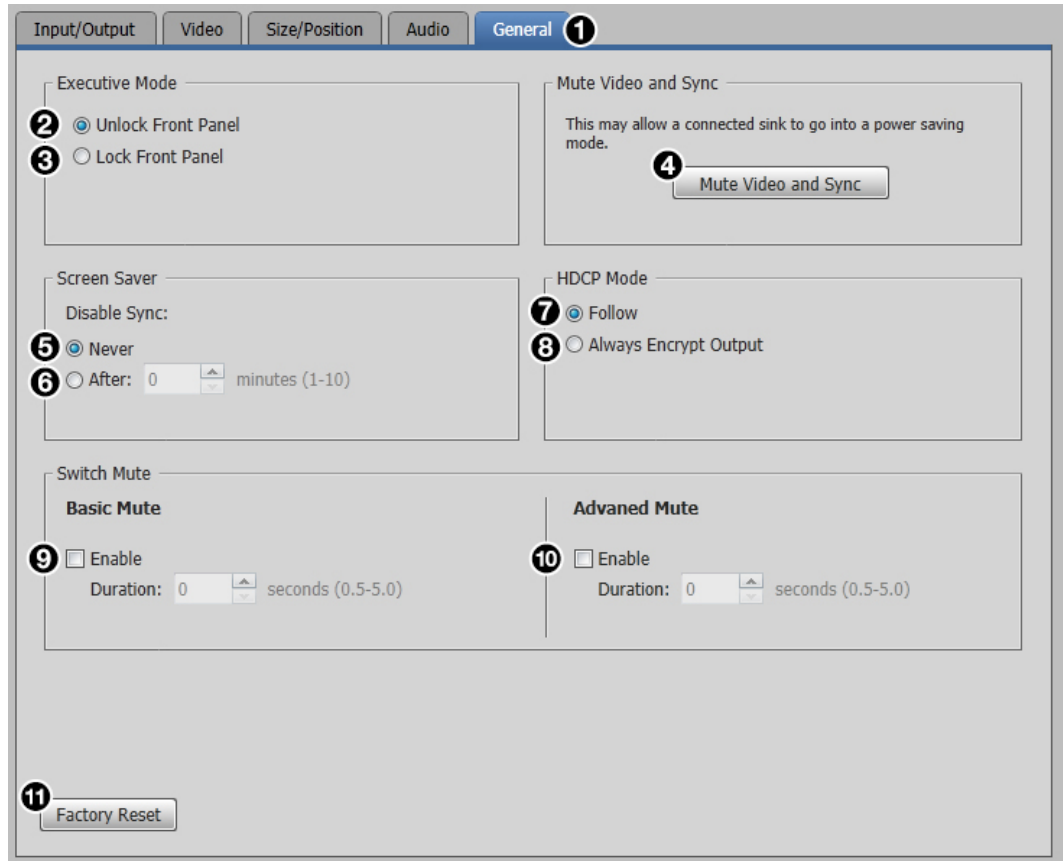
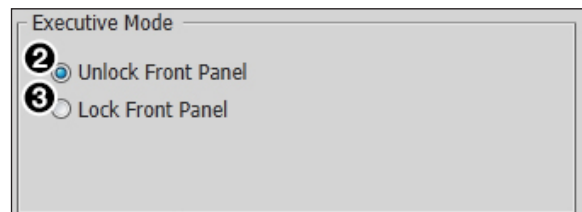


Figure 32. General Tab

### Executive Mode panel

The Executive Mode panel on the General screen is used to enable or disable front panel lockout mode (executive mode).

- ② **Unlock front panel** — Click the **Unlock Front Panel** radio button (default) to disable executive mode and allow full use of the receiver front panel.
- ③ **Lock front panel** — Click the **Lock Front Panel** radio button to enable executive mode and lock the front panel.

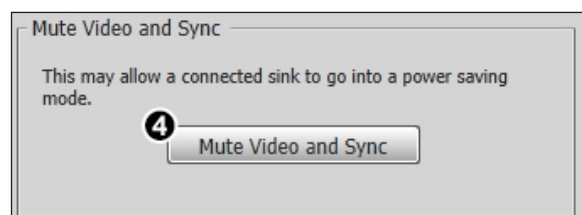


**NOTE:** In executive mode, access to the OSD menu is disabled.

### Mute Video and Sync panel

The Mute Video and Sync panel on the General screen is used to mute or unmute output video and sync.

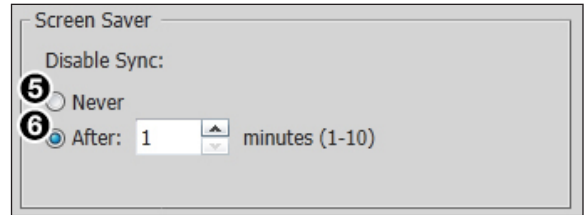
- ④ **Mute video and sync** — Click the **Mute Video and Sync** button to mute the active video and disable sync on the output.



## Screen Saver panel

The **Screen Saver** panel on the **General** screen is used to enable or disable a screen saver. When enabled, the output sync is disabled after a specified amount of time.

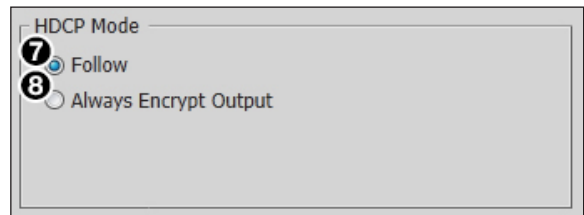
- 5 **Never** — Click the **Never** radio button to disable the screen saver setting.
- 6 **Duration** — Enter a value in the **After:** field, or click the **Up** and **Down** arrows to specify a duration of inactivity before a screen saver is activated. The duration is set in minutes.



## HDCP Mode panel

The **HDCP Mode** panel on the **General** screen is used to set HDCP encryption of the output signal.

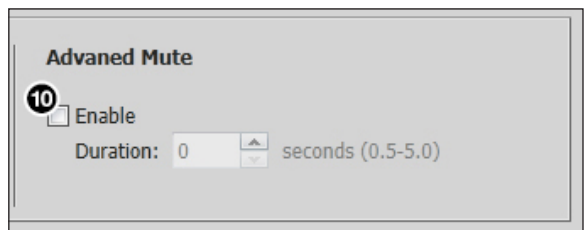
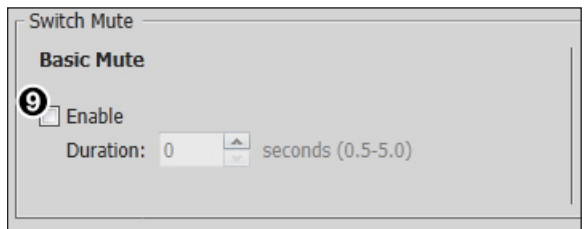
- 7 **Follow** — Click the **Follow** radio button to set the HDCP encryption of the output signal to follow the input signal setting.
- 8 **Always Encrypt Output** — Click the **Always Encrypt Output** radio button to always encrypt the output regardless of the encryption status of the input signal.



## Switch Mute panel

The **Switch Mute** panel on the **General** screen is used to enable or disable mutes during switching.

- 9 **Basic mute** — Select the **Enable** check box in the **Basic Mute** panel to mute the output during switching.  
If enabled, enter a value in the associated **Duration:** field, or click the **Up** and **Down** arrows to specify a mute duration between switching. The duration is set in 0.5 second increments.
- 10 **Advanced mute** — Select the **Enable** check box in the **Advanced Mute** panel to add an additional mute to help compensate for switching between different input resolutions.  
If enabled, enter a value in the associated **Duration:** field, or click the **Up** and **Down** arrows to specify a duration of the additional mute. The duration is set in 0.5 second increments.



## Factory Reset

Click the **Factory Reset** button (see figure 32, 11) to reset the receiver to factory settings (except for firmware).

**NOTE:** This is the same as the **[Esc] ZXXX SIS** command (see the **Factory defaults** SIS command on page 28).

## Device Information panel

The Device Information panel displays device information and signal status information.

### General Information section

- ❶ **Model** — Displays the device model.
- ❷ **Firmware Version** — Displays the firmware version.

### Signal Information section

- ❸ **Input Signal Present** — Displays the signal presence. The indicator to the left turns green when there is an input signal present.
- ❹ **Aspect Ratio** — Displays the aspect ratio.
- ❺ **Resolution** — Displays the output resolution and refresh rate.
- ❻ **Output Format** — Displays the HDMI output format setting.
- ❼ **Video Bit Depth** — Displays the video bit depth setting.

### Audio Information section

- ❽ **HDMI Audio** — Displays the mute status of the HDMI audio output.
- ❾ **S/PDIF Audio** — Displays the mute status of the audio on the S/PDIF output.
- ❿ **Analog Audio** — Displays the mute status of the analog audio output.
- ⓫ **Analog Audio Volume** — Displays the analog audio output volume level.

XTP SR HDMI		
<b>General Information</b>		
Model:	XTP SR HDMI	❶
Firmware Version:	1.04.0008	❷
<b>Signal Information</b>		
Input		
<input type="radio"/> Signal Present:	No	❸
Output		
Aspect Ratio:	Fill	❹
Resolution:	720p (1280x720) @60Hz	❺
Output Format:	Auto	❻
Video Bit Depth:	Auto	❼
<b>Audio Information</b>		
HDMI Audio:	Unmuted	❽
S/PDIF Audio:	Unmuted	❾
Analog Audio:	Unmuted	❿
Analog Audio Volume:	100 %	⓫



# Reference Information

This section contains mounting information and updating firmware methods. Topics in this section include:

- [Mounting](#)
- [Updating Firmware with Firmware Loader](#)

## Mounting

The XTP SR HDMI can be placed on a tabletop or mounted in a rack or underneath a desk.

### Tabletop Mounting

Attach the provided rubber feet to the bottom four corners of the enclosure.

### Mounting Kits

Mount the unit using any optional compatible rack shelf or mounting kit listed on the Extron website ([www.extron.com](http://www.extron.com)), in accordance with the directions included with the kit. For rack-mounting, see UL guidelines for rack-mounted devices below.

#### UL guidelines for rack-mounted devices

The following Underwriters Laboratories (UL) guidelines pertain to the safe installation of the XTP SR HDMI in a rack.

- 1. Elevated operating ambient temperature** — If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient temperature. Therefore, install the XTP SR HDMI in an environment compatible with the maximum ambient temperature ( $T_{ma} = +122\text{ }^{\circ}\text{F}$ ,  $+50\text{ }^{\circ}\text{C}$ ) specified by Extron.
- 2. Reduced air flow** — Install the equipment in a rack so that the amount of air flow required for safe operation of the equipment is not compromised.
- 3. Mechanical loading** — Mount the equipment in the rack so that a hazardous condition is not achieved due to uneven mechanical loading.
- 4. Circuit overloading** — Connect the equipment to the supply circuit and consider the effect that circuit overloading might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.
- 5. Reliable earthing (grounding)** — Maintain reliable grounding of rack-mounted equipment. Pay particular attention to supply connections other than direct connections to the branch circuit (for example, the use of power strips).

## Updating Firmware with Firmware Loader

To upload and update firmware for the XTP SR HDMI, download the new firmware to a connected computer and upload the firmware with the Extron Firmware Loader utility.

### Downloading Extron Firmware Loader

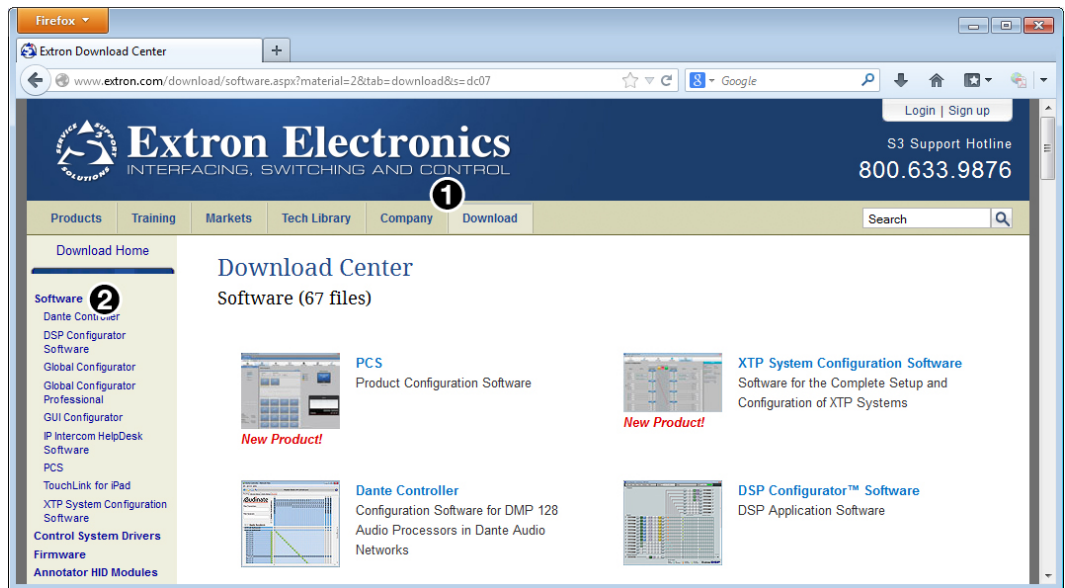


Figure 33. Software on the Extron Website

1. On the Extron [website](#), click the **Download** tab (see figure 33, ①).
2. From the left sidebar, click the **Software** link (see figure 33, ②).

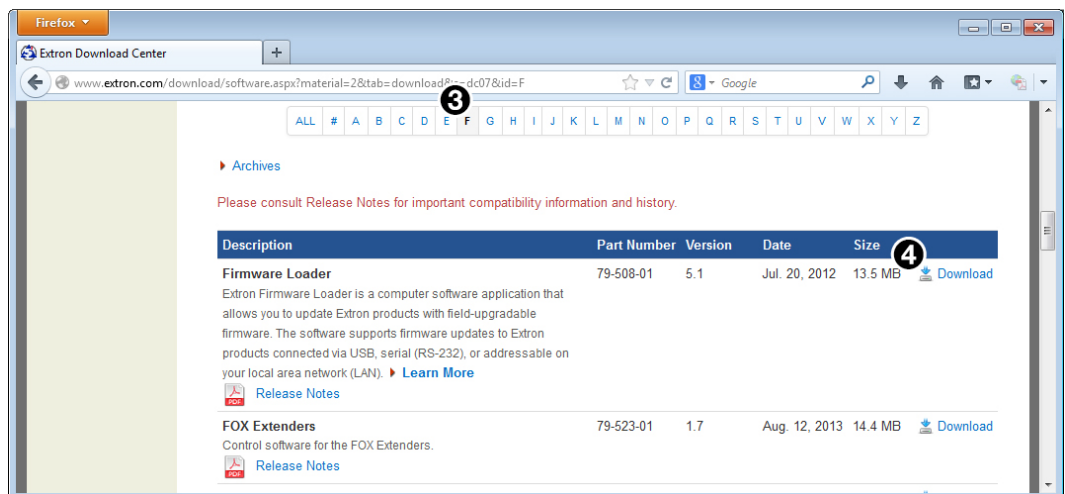


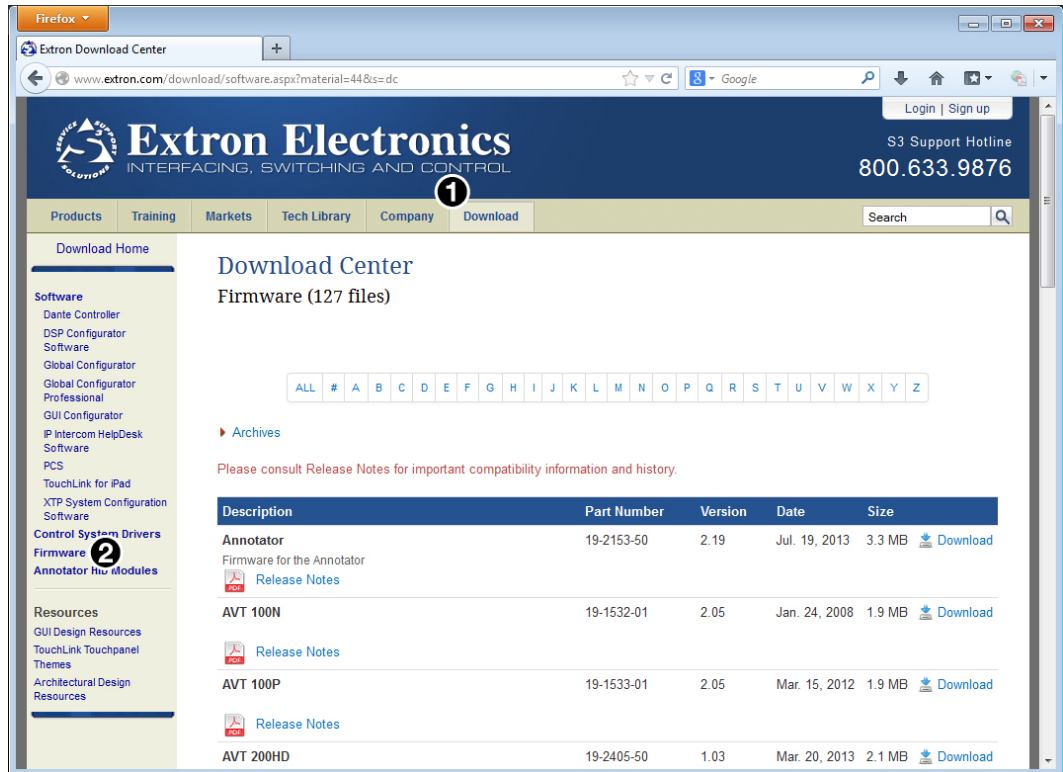
Figure 34. Firmware Loader on the Extron Website

3. Click the **F** link and navigate to Firmware Loader (see figure 34, ③).
4. Click the **Download** link on the right that corresponds with the program (see figure 34, ④).
5. Submit any required information to start the download.

## Installing Firmware Loader

1. Once Firmware Loader has been downloaded, run the .exe file from the location where the file was saved. The installation window opens.
2. Follow the instructions on the installation screens to install Firmware Loader on the computer.

## Downloading Firmware



**Figure 35. Downloading Firmware from the Extron Website**

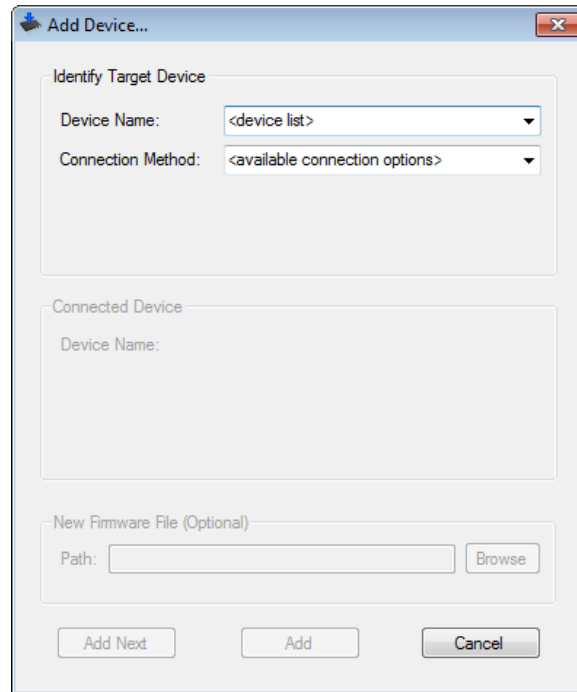
1. On the Extron [website](#), click the **Download** tab (see figure 35, ①).
2. From the left sidebar, click the **Firmware** link (②).
3. Navigate to XTP SR HDMI.
4. Ensure the available firmware version is a later version than the current one on the device.

**NOTE:** The firmware release notes are a PDF file that provides details about the changes between different firmware versions. The file can be downloaded from the same page as the firmware.

5. Click the **Download** link to the right of the desired device.
6. Submit any required information to start the download. Note where the file is saved.

## Installing Firmware with Firmware Loader

1. Connect the host device to the front panel USB port.
2. Open Firmware Loader and establish a connection between the computer and the device. The Add Device... dialog box opens.



**Figure 36. Add Device... Dialog Box**

3. From the **Device Name** drop-down list, select **XTP SR HDMI**.
4. From the **Connection Method** drop-down list, select the method of connection.
5. Depending on the connection method, additional options appear. Make the appropriate selections for the current connection method.
6. Click the **Connect** button.
7. Click the **Browse** button in the **New File Firmware (Optional)** panel. The **Open** dialog box opens.
8. In the **Open** dialog box, navigate to the location of the new firmware file, select the desired file.

### **ATTENTION:**

- Valid firmware files must have the file extension **.S19**. A file with any other extension is not a firmware upgrade for this device and could cause the device to stop functioning.
- Les fichiers firmware valides doivent contenir l'extension fichier **S19**. Un fichier avec n'importe quelle autre extension n'est pas une mise à jour de firmware pour cet appareil et l'appareil pourrait arrêter de fonctionner.

9. Click the **Open** button. The **Browse** dialog box closes.
10. Click the **Add** button. The **Add Device...** dialog box closes and the device and firmware are listed in the Firmware Loader main window.
11. Click the **Begin** button to start the upload process.
12. Close Firmware Loader when the **Remaining Time** field shows **00.00.00**, the **Progress** column shows **100%**, and the **Status** field shows **completed**.

## Extron Warranty

Extron Electronics warrants this product against defects in materials and workmanship for a period of three years from the date of purchase. In the event of malfunction during the warranty period attributable directly to faulty workmanship and/or materials, Extron Electronics will, at its option, repair or replace said products or components, to whatever extent it shall deem necessary to restore said product to proper operating condition, provided that it is returned within the warranty period, with proof of purchase and description of malfunction to:

**USA, Canada, South America,  
and Central America:**

Extron Electronics  
1230 South Lewis Street  
Anaheim, CA 92805  
U.S.A.

**Japan:**

Extron Electronics, Japan  
Kyodo Building, 16 Ichibancho  
Chiyoda-ku, Tokyo 102-0082  
Japan

**Europe and Africa:**

Extron Europe  
Hanzeboulevard 10  
3825 PH Amersfoort  
The Netherlands

**China:**

Extron China  
686 Ronghua Road  
Songjiang District  
Shanghai 201611  
China

**Asia:**

Extron Asia Pte Ltd  
135 Joo Seng Road, #04-01  
PM Industrial Bldg.  
Singapore 368363  
Singapore

**Middle East:**

Extron Middle East  
Dubai Airport Free Zone  
F12, PO Box 293666  
United Arab Emirates, Dubai

This Limited Warranty does not apply if the fault has been caused by misuse, improper handling care, electrical or mechanical abuse, abnormal operating conditions, or if modifications were made to the product that were not authorized by Extron.

**NOTE:** If a product is defective, please call Extron and ask for an Application Engineer to receive an RA (Return Authorization) number. This will begin the repair process.

**USA:** 714.491.1500 or 800.633.9876

**Europe:** 31.33.453.4040

**Asia:** 65.6383.4400

**Japan:** 81.3.3511.7655

Units must be returned insured, with shipping charges prepaid. If not insured, you assume the risk of loss or damage during shipment. Returned units must include the serial number and a description of the problem, as well as the name of the person to contact in case there are any questions.

Extron Electronics makes no further warranties either expressed or implied with respect to the product and its quality, performance, merchantability, or fitness for any particular use. In no event will Extron Electronics be liable for direct, indirect, or consequential damages resulting from any defect in this product even if Extron Electronics has been advised of such damage.

Please note that laws vary from state to state and country to country, and that some provisions of this warranty may not apply to you.

<b>Extron Headquarters</b> +1.800.633.9876 (Inside USA/Canada Only) Extron USA - West +1.714.491.1500 +1.714.491.1517 FAX	<b>Extron Europe</b> +800.3987.6673 (Inside Europe Only) Extron USA - East +1.919.850.1000 +1.919.850.1001 FAX	<b>Extron Asia</b> +65.6383.4400 +65.6383.4664 FAX	<b>Extron Japan</b> +81.3.3511.7655 +81.3.3511.7656 FAX	<b>Extron China</b> +86.21.3760.1568 +86.21.3760.1566 FAX	<b>Extron Middle East</b> +971.4.299.1800 +971.4.299.1880 FAX	<b>Extron Korea</b> +82.2.3444.1571 +82.2.3444.1575 FAX	<b>Extron India</b> 1800.3070.3777 Inside India Only +91.80.3055.3777 +91.80.3055.3737 FAX
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